Policy Evaluation of the Overall Effects of Welfare Reform on SSA Programs

Final Report

Prepared for:

Social Security Administration

Howard Iams, Task Manager
Task Order No. 0440-98-33244
Contract No. 0600-98-27331

Prepared by:

The Lewin Group, Inc.

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The opinions expressed and conclusions drawn in this report are the responsibility of the authors, and do not represent the official views of the Social Security Administration, other agencies, or The Lewin Group.

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EXECUTIVE SUMMARY

I. PURPOSE OF THE STUDY

In the past two years, Congress has enacted several pieces of legislation that will have significant impacts on the Social Security Disability Insurance (DI) Program and the Supplemental Security Income (SSI) Program. Some of the reforms affect these programs directly ("SSA reforms"), while others have an indirect effect through program interactions ("non-SSA reforms"). The two main pieces of legislation of interest for this report are: the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, which was later amended by the Balanced Budget Act (BBA) of 1997, and the Contract with America Advancement Act of 1996 (P.L. 104-121). PRWORA converted the Aid to Families with Dependent Children (AFDC) program from an open-ended entitlement program into an appropriated block grant program, Temporary Assistance for Needy Families (TANF), incorporating time limits on the receipt of benefits as well as strict work requirements. PRWORA also tightened child eligibility for SSI, narrowed program eligibility for non-citizens, reduced funding for Food Stamps, targeted funding to family day care homes under the Child and Adult Care Food Program, and enacted reforms in the child care programs and in the Child Support Enforcement Program. Section 105 of P.L. 104-121 mandated the removal of persons from the disability programs by January 1997 for whom drug addiction and/or alcoholism (DA&A) contributed materially to the determination of disability. The BBA restored SSI program eligibility for aliens receiving SSI prior to August 1996 and for legal non-citizens residing in the U.S. prior to August 1996 who become disabled in the future.

It is important for SSA to understand the effects of these reforms on the DI and SSI programs, for several reasons. For both budget and operational planning purposes, it is important to develop good estimates of future program participation.[1] It is also important to understand how the reforms will affect the composition of program caseloads; for example, are new participants more likely to be young adults, middle-aged adults, or children. Finally, as time progresses, it will be important to explain changes in participation to policy officials in the Executive Branch and Congress. An understanding of how these reforms are affecting SSA caseloads will enable SSA to better explain the dynamics of program change and will help support the development of policy improvements.

The purpose of this study is to develop options for evaluating the impacts of these reforms on SSA programs. Evaluation options are developed for estimating the impact of the non-SSA reforms alone, and for estimating the *total effect* of all recent SSA and non-SSA reforms. Currently, the impacts of two major SSA reforms have been or are currently being evaluated under separate contracts – the Lewin Group assessed the effects of the DA&A policy change, and RAND is evaluating the impact of the new SSI child policy. The options designed under this study build on these efforts.

[1] The Office of the Actuary has identified this as an issue that requires further attention, but has not yet incorporated these issues into their projections. For a more complete discussion, see SSA (1998a).

II. APPROACH TO DEVELOPING EVALUATION DESIGN OPTIONS

In developing the final options for evaluating the effects of the SSA and non-SSA reforms on the DI and SSI programs presented in this report, we conducted a number of activities intended to provide a variety of information that would facilitate the development of the evaluation options. These activities include: a major review of literature and other information; a review of ongoing and proposed state and other welfare reform evaluation efforts; site visits in five states; and the analysis of SSA administrative data, both by itself, and matched to data from the Survey of Program Participation (SIPP). In the sections below, we briefly describe each of these activities. The findings from the literature were presented in a previous report for the project entitled *Literature Review and Study Design Report* (Lewin, 1998b). Other findings are presented in subsequent chapters and appendices of this report.

A. Literature Review

We reviewed and synthesized literature and substantial other material of relevance to the project for the purposes of:

- improving our understanding of reforms and the legislative and programmatic history underlying them;
- developing a conceptual framework to support the analysis options; and
- understanding the strengths and limitations of various analysis options and the data needed to support them.

Based on this review and synthesis, we further developed a subset of the preliminary options first presented in the *Literature Review and Study Design Report*. The literature review also contributed to the development of plans for the analyses of SSA administrative data and data from the Survey of Income and Program Participation (SIPP) presented in this report, which further supported the development of the final evaluation options presented.

B. Review of Welfare Reform Evaluations

One approach to evaluating the effects of non-SSA reforms on SSI and DI is to build on existing or planned efforts to evaluate state welfare reform initiatives. For this reason, we reviewed a substantial number of planned or ongoing welfare reform assessments in order to identify opportunities for learning about the effects of those reforms on SSI and DI. The criteria we used in selecting the assessments for review include the following: the likely impact on SSI or DI of the reforms included in the assessment; evaluations of leading-edge programs enabling early assessment of TANF changes, such as benefit time limits; the quality of the design for determining the impacts of program changes; and broad assessments that provide information of relevance beyond specific states, particularly if they include information on participation in other programs. Our review of welfare reform evaluations identified a group of experimental evaluations that offer an opportunity to establish a causal link between specific TANF reform and SSI outcomes. We also identified quantitative and qualitative studies that can help SSA to track transition to SSI in specific states and to describe the policy and program context in those states.

C. State Site Visits

We conducted three-day site visits to each of five states: California, Connecticut, Florida, Michigan, and Wisconsin. The primary purpose of the visits was to gain a better contextual understanding of the impact of non-SSA welfare reforms on SSA programs. A second purpose of the visits was to obtain detailed information on: on-going welfare evaluations of interest; the availability of state or local administrative or survey data; and the potential for linking the state data to SSA administrative data. The nature and availability of state-level data on the populations affected by the legislation have implications for some of the potential study designs.

In selecting the five states, we considered the following factors: size of the welfare population; "interesting" state waiver provisions outside the basic federal requirements; program time limits; stringent work requirements; availability of transitional Medicaid or child care; subsidized employment opportunities; evidence of past shifting of welfare recipients from state to federal rolls; and region of the country. In each state, we conducted interviews with representatives from the following types of agencies and organizations: entities conducting state AFDC waiver and demonstration projects prior to the passage of PROWRA; state TANF programs instituted after PROWRA; state and local General Assistance programs; state Medicaid programs; SSA field offices; and advocacy groups and local service providers.

In only one of the states we visited was there the perception that the recent welfare reforms had caused increased transitions to SSI. Interviewees in the other four states acknowledged the now increased incentive for recipients with disabilities to apply for SSI given the stricter work requirements of their TANF programs, and increased incentives for states to help them obtain SSI, but there is no perception of an actual migration to SSI following the most recent reforms. There are several reasons for this. First, most of the states we visited have been identifying and actively referring potential SSI-eligible welfare recipients to SSI since the early 1990s. Second, the time limits for benefit receipt had not yet elapsed for any recipients in the TANF programs.

We asked many knowledgeable people about the possible effects of Food Stamp and Medicaid reforms on SSI. None perceived or expected a significant effect of these reforms on the SSI program. Other effects identified by interviewees included an increase in employment services and other resources for persons with disabilities and concern for the welfare safety net for persons with disabilities.

D. Preliminary Analyses of the Pre-Reform Period

We conducted two analyses of the pre-reform period. In the first, we examined national and state adult SSI disability application trends, by sex and age, for the period from 1988 to 1997. This includes both descriptive analysis and pooled time-series analysis of the state-level data. In the second, we used data from the 1990, 1991, 1992 and 1993 SIPP panels matched to SSA administrative data. This analysis includes both descriptive analyses and econometric (hazard) analyses of SSI applications and allowances. The SIPP analyses make use of the fact that we can observe the entire SSI participation history of each respondent in the administrative data.

Several important findings emerge from this analysis. First, there was a very substantial flow of program participants from AFDC to SSI during the pre-reform period. Of the young women (age

18 – 40) who were AFDC recipients when first observed in the SIPP panels, 7.5 percent were eligible for at least one SSI payment in the 1996-97 period. Some of these women (about two percent) had received SSI income before they were observed in SIPP, but most had not. While this is a relatively small share of AFDC recipients, the number of people it represents is large relative to the number of young female SSI recipients. For instance, it is nearly half as large as our estimate of the average young female SSI caseload in the 1990 – 1993 period.[2]

The numbers are larger for children who were identified as AFDC recipients via SIPP. The number of these children who received an SSI payment in 1996-97 is almost 80 percent of the estimated average child SSI caseload in the 1990 – 1993 period. The strength of the finding for children is not surprising, given *Zebley* and subsequent changes to the child eligibility criteria. The strength of the finding for young women is more difficult to explain. It could be attributable to historically high transitions from AFDC to SSI. We found, however, that only 24.6 percent of young women who were SSI recipients when observed in SIPP reported past AFDC receipt. In contrast, of those young women who received first SSI allowances after they were observed in SIPP, 42.7 percent were past AFDC recipients. This suggests that other factors increased transitions from AFDC to SSI over this period. We did not find any evidence that AFDC/TANF reforms prior had contributed to this shift, although this possibility cannot be ruled out on the basis of our analysis. Other possible explanations are growth in female-headed households, aging of the baby boom generation, various outreach efforts, administrative changes that made it easier to obtain benefits on the basis of psychiatric disorders, including substance abuse, and possible spill-over effects from Zebley.

Through our pooled time-series analyses of state level data. we found, though, that it is very difficult to disentangle the causes of SSI application and allowance growth from 1988 through 1993, or the sharp declines thereafter. The analysis of the national and state data clearly show that the economy, aging of the baby boom generation, and various state and federal policies are significant contributors to this pattern. We do not, however, have very good knowledge about their relative importance, or of the importance of other factors (e.g., growth in female-headed households). This makes it problematic to use analysis of this period for the purpose of generating the counterfactual SSI outcomes in the post-reform period. Although future efforts may be more successful in explaining past growth than the exploratory analysis reported here, the findings have discouraged us from recommending pooled time-series analysis of state data as a primary methodology for the evaluation.

The econometric analysis of applications and allowances using the four matched SIPP/SSA samples (pooled) demonstrates that this type of analysis is feasible, and provides a foundation for a viable evaluation option. Many of the characteristics of SIPP respondents who are at-risk for SSI when they are first observed are predictive of later SSI applications and allowances. These include education, family status, program participation and income variables, as well as self-reported disability and health.

The econometric analysis provides evidence of an upward shift in the probability of SSI application among young mothers, relative to the corresponding probability for other young

[2] These numbers likely understate the size of the flow because of an artifact of the data.

women, from 1991 to 1995, but a downward shift of roughly equal magnitude from 1995 to 1997. Similar findings are found for men. The analysis also shows that it is difficult to identify the cause of such shifts via this methodology. A major limitation of the analysis is that the number of applications or allowances from the pooled SIPP samples in each state are too small in each year to estimate the effects of state factors, including welfare reforms.

III. EVALUATION OPTIONS

A. Objectives

We present a series of options for evaluating the impacts of welfare reforms on SSA programs. Options are proposed for estimating the impact of non-SSA reforms alone, and for estimating the total effect of all recent SSA and non-SSA reforms. Several important considerations guided our development of the evaluation options:

- There is a strong consensus among the state and local people we interviewed during our site visits that the conversion of AFDC to TANF and the resulting strict work requirements and time limits had the greatest potential for producing a significant effect on SSA programs. There seems little reason to consider other non-SSA reforms at this time.

- Most of the impacts of non-SSA reforms will be on SSI and any effects on DI are likely to be via concurrent cases only. The only SSA reform that directly affects DI is the DA&A reform. Even in this instance, 79 percent of the beneficiaries directly affected were SSI recipients, including concurrent recipients (Lewin, 1998). Hence, apart from the evaluation of the effect of DA&A reforms on DI-only cases, it seems sensible to focus evaluation efforts on SSI, with auxiliary analyses of DI where feasible.

- It will be easier to detect the impacts of non-SSA reforms on applications and allowances than on caseloads or payments. Hence, it seems sensible to focus initial evaluation efforts for the effects of non-SSA reforms on applications and allowances.

- It is important to have realistic expectations about the information that a future evaluation can produce. It is unrealistic to expect accurate estimates of the total impacts of all reforms, or of specific non-SSA reforms alone. As was demonstrated by our efforts to model the pre-reform period, it is extremely difficult to account for more than a modest proportion of the factors that are responsible for changes in SSI applications and allowances over time. It is also very difficult to accurately control for the effects of factors such as the economy. There is, however, much that can be done to obtain useful information about the interactions between SSA and non-SSA programs, the intersection between the populations they serve, and how they both are changing over time because of program changes as well as other factors.

- The best way to rigorously evaluate the impacts of non-SSA reforms on SSI is by building on experimental welfare evaluations currently underway. Even though these evaluations will not produce nationwide estimates of the impacts of reforms, they offer a unique opportunity to establish a causal relationship between specific TANF reforms and SSI outcomes.

B. Summary of Options

The four evaluation options outlined below and described in detail in ***Chapter 6*** of the full report are designed to achieve the best understanding of the effects of reform that is practical. SSA may choose to pursue some or all of these options. They can be implemented independently of one another or can be implemented so that the results of various approaches complement and support one another. The first option can provide information for every state as well as the nation as a whole, the second can provide national information, and the last two take advantage of opportunities that are only available in selected states.

1. Analysis of SSA Administrative Data

This option would use SSA administrative data to produce estimates of the impacts of TANF on SSI applications, allowances, caseloads, and benefits, along with collateral estimates of impacts on DI outcomes for those who apply for SSI. It would also produce estimates for the combined impacts of TANF and DA&A reforms on outcomes for those adults who were not SSI recipients at the time the reform legislation was enacted, as well as for the combined impacts of TANF and SSI child reforms on outcomes for those children who were not SSI recipients at the time the legislation was enacted. Initial estimates for each post-reform year would be based on age-sex adjusted comparisons of changes in outcomes for target and comparison groups within each state. This would produce time series of estimates for each state, which could be aggregated to obtain national estimates. The reforms might explain any differences observed, although there will inevitably be competing explanations. The state estimates for the impacts of TANF would help SSA detect substantial shifts in SSI applications from, and allowances to, TANF recipients in each state, whether or not they could be definitively attributed to TANF reforms.

As stated above, the initial estimates are in the form of time series for each state for the observed post-reform period. SSA might want to construct the same series over the pre-reform period, and then conduct a pooled time-series analysis of the estimates over the pre- and post-reform periods, to better assess the extent to which TANF reforms contributed to trends in the estimates. While the marginal value of the pooled time-series analysis might be limited, the cost might also be low. The analysis would produce refined estimates of the impacts in each state, as well as nationally.

This option also includes a sub-option for evaluating the impact of new restrictions on SSI eligibility for non-citizens.

2. Analysis of Census/SSA Matched Data

The analysis of applications and allowances presented in ***Chapter 5*** can be extended to produce a second national estimate of the impact of TANF reform on applications and allowances, and auxiliary equations can be developed to generate caseload and benefit estimates.

SSA has linked data from the 1984, 1990, 1991, 1992 and 1993 Surveys of Income and Program Participation (SIPP) and the 1991 and 1994 Current Population Surveys (CPS) to SSA administrative data. Future matches of both surveys are anticipated. This option would use these data to:

- Estimate the impact of TANF reforms on SSI applications, allowances, caseloads and benefits, given the SSA reforms, at the national level during the observed post-period. Estimates of impacts on DI outcomes for SSI applicants would also be produced ; and

- Estimate the combined impacts of all reforms on SSI caseloads and benefits in the post-period.

We used the 1990 – 1993 matched SIPP/SSA files to estimate the hazard models for SSI applications and allowances that are presented in ***Chapter 5***. This analysis can be extended to study the impact of TANF on SSI outcomes. There is, however, an important *caveat*. It will be problematic to attribute estimated shifts in SSI applications from, and allowances to, those in the target population for TANF to TANF reforms themselves. As seen earlier, such shifts occurred before TANF. There are several explanations for these pre-TANF shifts, but our ability to discriminate among them is very limited. Future analysis is likely to encounter similar ambiguities.

Nonetheless, it would be useful for policymakers and planners to know when shifts from TANF to SSI are occurring, how large the shifts are, and the potential implications of the shifts for caseloads and costs. The estimates produced would also complement and validate the national estimates produced using the administrative data alone. A main advantage of the matched data over the administrative data alone is the availability of extensive information on the characteristics of SIPP respondents, including family characteristics and past participation in AFDC – information that can be used to better define target and comparison groups

The second part of this option addresses the need to evaluate the impacts of all reforms. We present a method that could use either the SIPP/SSA or CPS/SSA matched data. The approach would predict counterfactual caseloads in the post-period, using cross-sectional models estimated in the pre-period, and compare the size and characteristics of the actual and counterfactual caseloads. Actual and counterfactual benefits would also be compared. Again it will be problematic to attribute differences in the actual and counterfactual outcomes to the combined effects of the policy changes, exclusively. Differences in the characteristics of those in the actual and counterfactual caseloads should provide substantial information about how important the policy changes were.

The matched data could also be used to validate and improve the analysis of SSA administrative data.

3. State Welfare Reform Evaluations

A number of states implemented time limits and strict work requirements in conjunction with HHS waivers prior to the passage of PRWORA in August 1996. Several of these states have continued experimental evaluations of their programs and offer the best opportunity to assess the impact of these provisions on both adult and child family members. Experimental evaluations offer the unique opportunity to follow the paths of families randomly assigned to treatment and control groups. To the extent that their pattern of SSI participation is significantly different, it is reasonable to conclude that the difference is due to the program intervention.

SSA could work with these states and their evaluation contractors to identify the information that can be obtained under the existing design and pursue the option of linking evaluation data with SSA administrative data to follow SSI applications and allowances among treatment and control group members, to supplement existing information as necessary.

We have identified nine states that have experimental evaluations in place and offer the opportunity to track research group members' interaction with SSA programs. We identify the nine states for further consideration, their evaluation contractors, the program design, and the potential link to SSI. Five of these states: Connecticut, Florida, Indiana, Iowa, and Minnesota have also identified specific child impact measures for incorporation into their studies.

We have also identified an experimental evaluation in California, the Employment Readiness Demonstration Project (ERDP), which offers the opportunity to explore the effects of mandatory work requirements and program services on individuals with multiple barriers to work. It may be interesting to explore the effects of a demonstration that focuses on individuals who might, as a group, have a greater probability of applying for SSI. All of the individuals in the research group are subject to a five-year time limit on receipt of cash assistance. Only those in the treatment group are receiving intensive services.

Finally, the newly funded Welfare to Work (WtW) Evaluation is still in its formative stages. HHS and its contractor, Mathematica Policy Research, have not yet selected sites to be included in the impact study. WtW will, by definition, focus services on the "harder to serve". For this reason, SSA could consult with the Office of the Assistant Secretary for Planning and Evaluation (ASPE) on the evaluation design and explore its relevance to questions of interest to SSA.

All of these experimental studies can help validate the estimates of the effects of TANF reforms produced with SSA administrative data. Comparisons of estimates for several states would help the evaluator to assess the reasonableness of the national estimates produced by both of the first two options.

4. State Case Studies

SSA could also conduct case studies of specific states using both quantitative and qualitative methods. SSA can use state administrative data, SSI administrative data, and survey research to track the SSI applications of current and former TANF recipients and the SSI allowances of former TANF recipients. Qualitative case study data can be used to provide contextual information regarding relevant TANF program and policy initiatives, the experience of SSA field offices and State DDSs, as well as the perceptions of state and local advocates and interest groups. SSA can implement this option by building on existing work in progress and by conducting its own tracking efforts and case studies.

There are two primary options for building on existing work. ASPE recently funded 14 State/County Welfare Leaver Studies. These studies involve the tracking of multiple cohorts of closed TANF cases over varying periods of time using both administrative data and surveys. SSA could contact ASPE to explore what information these studies will provide as currently funded. SSA could also explore working with ASPE and the states to establish SSA data linkages to the cases being tracked and/or to add questions regarding SSI application or receipt

among those surveyed. These projects are still in the formative stage; SSA might work with ASPE and the states to make minor changes in data collection plans that would add to the utility of these projects for SSA's purposes.

SSA could also explore further the extent to which the Urban Institute's "Assessing the New Federalism Project" addresses issues of interest to SSA. At a minimum, the study will provide detailed information on state policies in all states, case studies of program implementation in 13 states, and information on the status of low-income families in those same states. Six of the Urban Institute states (California, Florida, Massachusetts, New York, Washington, and Wisconsin) are also participating in the ASPE Welfare Leavers Study. Urban Institute case study findings from these six states could nicely complement the tracking information obtained through the welfare leavers study. It might be possible to add questions of special interest to SSA such as the treatment of persons with disabilities, or the active referral of TANF clients to SSA, to the current case study protocol.

SSA could also undertake its own tracking studies and case studies. SSA may want to identify a sample of states of special interest, perhaps those that account for a large share of SSI applications and allowances, and set up data matching arrangements to track transitions from TANF to SSI over time. Such arrangements could build on and supplement tracking data collected through the ASPE studies by tracking a larger sample of TANF families for a longer period of time than anticipated in those studies. We suggest exploring this possibility initially in Florida and California. Over time, SSA could expand tracking to other large states.

All of these descriptive study approaches will provide SSA information on the flow of TANF recipients into SSI and on implementation choices states are making that may be influencing those transitions. If collected over time in a number of states, this information might be used to support future modeling efforts of the effects of TANF on SSI. Information on state policies can provide important information for key independent variables in options using administrative data. Findings from the Urban Institute's Survey of American Families can help establish comparison groups of low income mothers and/or children who are not participating in TANF but have similar characteristics. It might also be used to validate estimates of TANF impacts that are based on SSA administrative data alone.

5. Other Data Sources

We examined other data sources that SSA might find useful for the evaluation. One of special interest is part of the Urban Institute's New Federalism project: The Welfare Rules Database. While some data are collected concerning policy towards people with disabilities, SSA might find it valuable to encourage expansion of data collection on this topic.

We also identified a few state administrative databases that might be of interest for the evaluation, in addition to those mentioned above. Finally, we considered other survey data. Of these, the Survey of Program Dynamics – a six-year follow-up to the 1992 and 1993 SIPP – hold the most promise. It appears, however, that high attrition would make use of these data very problematic for SSA's purposes. Evidence from the SIPP suggests that attrition among those most likely to apply for SSI is higher than among other groups.

6. Summary

The following exhibit (***Exhibit ES-1***) summarizes the evaluation options we have developed. It is important to have realistic expectations about the information that a future evaluation can produce. It is unrealistic to expect accurate national estimates of the total impacts of all reforms, or of specific non-SSA reforms alone. There is, however, much that can be done to obtain useful information about the interactions between SSA and non-SSA programs, the intersection between the populations they serve, and how they both are changing over time because of program changes as well as other factors. SSA administrative data and matched Census/SSA data offer opportunities to conduct these types of analyses.

The best way to rigorously evaluate the impacts of TANF reforms on SSI is by building on experimental welfare evaluations currently underway. Even though these evaluations will not produce nationwide estimates of the impacts of reforms, they offer a unique opportunity to establish a causal relationship between specific TANF reforms and SSI outcomes. SSA can supplement information it gathers through experimental studies by conducting case studies of specific states using both quantitative and qualitative methods. SSA can use state administrative data, SSI administrative data, and survey research to track the SSI applications of current and former TANF recipients and the SSI allowances of former TANF recipients. Qualitative case study data can be used to provide contextual information regarding the TANF program and policy initiatives that influence the movement of clients from TANF to SSI.

The options outlined in ***Exhibit ES-1*** provide SSA a set of complementary approaches for expanding its understanding of the effects of welfare reform on SSA programs.

Exhibit ES-1
Summary of Evaluation Options

Options		**Reforms**			**Outcome Variables**			
		AFDC/ TANF	Non-Citizens	Total	Applications	Allowances	Caseload	Benefits
1. SSA Administrative Data	DID*	Ö	Ö	Ö	Ö	Ö	Ö	Ö
	Pooled Time Series	Ö		Ö	Ö	Ö		
2. Matched Census/SSA Data	Hazard Analysis**	Ö			Ö	Ö	Ö	Ö
	Caseload Analysis	Ö		Ö			Ö	Ö
3. Welfare Impact Evaluation Add-ons***		Ö			Ö	Ö	Ö	Ö
4. State Case Studies***		Ö	Ö		Ö	Ö	Ö	Ö

*Difference in Differences analysis.
**Includes auxiliary analysis of benefit continuation and payments for allowed applicants.
*** In selected states only.

CHAPTER 1
INTRODUCTION AND BACKGROUND

I. PURPOSE OF THE STUDY

In the past two years, Congress has enacted several pieces of legislation which will have significant impacts on the Social Security Disability Insurance (DI) Program and the Supplemental Security Income (SSI) Program. Some of the reforms affect these programs directly ("SSA reforms"), while others have an indirect effect through program interactions ("non-SSA reforms"). The two main pieces of legislation of interest for this report are: the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, which was later amended by the Balanced Budget Act (BBA) of 1997, and the Contract with American Advancement Act of 1996 (P.L. 104-121). PRWORA converted the Aid to Families with Dependent Children (AFDC) program from an open-ended entitlement program into an appropriated block grant program, Temporary Assistance for Needy Families (TANF), incorporating time limits on the receipt of benefits as well as strict work requirements. PRWORA also tightened child eligibility for SSI, narrowed program eligibility for legal immigrants, reduced funding for Food Stamps, targeted funding to family day care homes under the Child and Adult Care Food Program, and enacted reforms in the child care programs and in the Child Support Enforcement Program. In 1996, Section 105 of P.L. 104-121 mandated the removal of persons from the disability programs by January 1997 for whom drug addiction and/or alcoholism (DA&A) contributed materially to the determination of disability. In ***Exhibit 1.1***, we summarize the changes to SSA and non-SSA programs. The BBA essentially eliminated the PRWORA restrictions on immigrants who legally entered before the passage of PRWORA.

It is important for SSA to understand the effects of these reforms on the DI and SSI programs, for several reasons. For both budget and operational planning purposes, it is important to develop good estimates of future program participation.[3] It is also important to understand how the reforms will affect the composition of program caseloads; for example, are new participants more likely to be young adults, middle-aged, or children? Finally, as time progresses, it will be important to explain changes in participation to policy officials in the Executive Branch and Congress. An understanding of how these reforms are affecting SSA caseloads will enable SSA to better explain the dynamics of program change and will help support the development of policy improvements.

The purpose of this study is to develop options for evaluating the impacts of these reforms on SSA programs. Evaluation options are developed for estimating the impact of the non-SSA reforms alone, and for estimating the *total effect* of all recent SSA and non-SSA reforms. Currently, the impacts of two major SSA reforms have been or are currently being evaluated under separate contracts – the Lewin Group assessed the effects of the DA&A policy change on the existing DA&A caseload, and RAND is evaluating the impact of the new SSI child policy. The options designed under this study build on these efforts.

[3] The Office of the Actuary has identified this as an issue that requires further attention, but has not yet incorporated these issues into their projections. For a more complete discussion, see SSA (1998a).

Exhibit 1.1
Major Provisions of Welfare and Other SSA-related Reforms

SSA related reforms	
Supplemental Security Income Changes for Children	• As of August 1996, the SSA definition of disability for individuals aged 18 and under requires that a child have a medically determinable physical or mental impairment resulting in marked and severe functional limitations. In addition, SSA is required to remove references to "maladaptive behavior" as a medical criterion for evaluating mental disabilities in children. Finally, "Individualized Functional Assessment" was eliminated for evaluating disability for children. This change in definition applies to all new claims. • As of July 1997, SSA must redetermine the cases of SSI children whose eligibility might terminate under the provisions of PRWORA. The earliest current recipients may lose their allowances is July 1997.
Restriction on Benefits for Aliens	• As of August 1996, new legal immigrants are not eligible for SSI until they become citizens or attain 40 quarters of Social Security covered employment. • Under BBA, aliens who were receiving SSI prior to August 1996 retain their program eligibility. In addition, BBA also allowed individuals who were legally residing in the U.S. prior to August 1996, and who become disabled in the future to obtain SSI. • Post-August 1996 qualified aliens are subject to a five-year exclusion from means-tested benefits. Refugees and asylees receive a seven year exemption from the restrictions on aliens for SSI and Medicaid.
SSI and DI Changes for Drug Addicts and Alcoholics	• As of March 1996, SSA must discontinue allowances to claimants whose alcoholism and/or drug addiction is material to their disability. • As of January 1997, SSA must remove beneficiaries whose alcoholism and/or drug addiction is material to their benefits. Affected beneficiaries are allowed to request a new determination.
Non-SSA related reforms	
Temporary Assistance for Needy Families	• As of July 1997, AFDC open-ended entitlement was eliminated and a state block grant program, TANF, was created to provide time-limited cash assistance for needy families. The time limit under TANF, which also applies to families previously receiving benefits, is five years, though this limit can vary by state. • Under TANF, participants must meet certain minimum work (or community service) requirements except in special cases (e.g., parents with infants under the age of one). • Medicaid eligibility is delinked from TANF and determined separately by states. • TANF eligibility for immigrants will be determined by states.
Food Stamps	• As of July 1997, able bodied childless adults must meet work requirements to be eligible for Food Stamp benefits. This provision requires states to terminate food stamps after three months in any three-year period to individuals between the ages of 18 and 50 who have no dependents, unless these individuals are disabled, working at least 20 hours a week, or participating in an employment and training program. • As of August 1996, legal immigrants, with few exceptions, are not eligible unless they become citizens. • As of July 1997, persons aged 21 and under who are themselves a parent or married, and who live with a parent, are not counted as their own separate household.
Child Support/ Child Protection/ Child Care/ Child Nutrition/ Miscellaneous	• Each state must operate a child support enforcement program meeting federal requirements. These measures include a national hire reporting system, streamlined paternity establishment, uniform interstate child support laws, computerized state-wide collections, grants for access and visitation programs, and tough penalties which expand wage garnishment and enable states to revoke drivers licenses for delinquent payments. • As of October 1997, states must deduct a minimum of 25 percent of TANF benefits from a family's cash assistance grant and may deny cash assistance entirely for failure to cooperate with child support without good cause. • States can pay for-profit providers to care for children eligible for child protective services in foster care. • As of October 1996, multiple funding sources for child care are consolidated into a single child care fund for TANF participants. • As of January 1997, a two-tier system of reimbursements is established for the Child and Adult Care Food Program. • As of January 1998, block grants are established for teen pregnancy prevention programs.

II. PURPOSE OF THE REPORT

This report represents the final report for the project. It contains a synopsis of the findings from all of the major activities conducted for the project, and presents a set of final options for evaluating the effects of the non-SSA welfare reforms on the SSA programs and for evaluating the total effects of both the SSA and non-SSA reforms.

In the remaining sections of this introductory chapter, we provide background on the major SSA and non-SSA reforms and the hypothesized effects of these reforms on the SSA disability programs. We then describe the major activities conducted for the project leading to the development of the final evaluation options. An overview of the remaining chapters of this report appears in the final section.

III. BACKGROUND ON SSA AND NON-SSA WELFARE REFORMS

The changes in DA&A policy and welfare reform will have direct and indirect effects on SSA related programs. The new restrictions on SSI eligibility for children and legal aliens, as well as the change in DA&A policy for SSI and DI participants, should directly reduce both current and future SSI and DI caseloads. In contrast, the welfare reform changes could indirectly increase current and, more likely, future participation in SSA programs because new restrictions in other programs, such as TANF (formerly AFDC) and Food Stamps, may create individual and fiscal incentives, particularly during an economic downturn, that make SSA program participation attractive. Below, we describe the potential direct and indirect effects of the SSA and non-SSA reforms. These effects are summarized in ***Exhibit 1.2***. Further information on the history of relevant program legislation, regulations, and court decisions related to these reforms is presented in ***Appendix A***.

A. Direct Effects of SSA Reforms

1. SSI Changes for Children

The more restrictive definition of disability for children will reduce the number of children on SSI. As of November 1997, SSA had reviewed cases of 263 thousand children who were affected by the change in definition, of whom 136 thousand received an unfavorable redetermination. In reviewing the redetermination process, however, SSA found problems with many redeterminations and plans to reopen a substantial number of cases. In addition, some families of these children will successfully appeal their termination. In total, SSA (1998b) estimates that after the review and appeals, approximately 36 thousand of those who originally received an unfavorable redetermination will remain SSI eligible. The new definition of disability should also cause new allowances to children to decline. For a more complete discussion of the impacts of the SSI child policy, see RAND (1998).

Exhibit 1.2
Impact of Major SSA and Non-SSA Reforms on SSA-Related Programs

Provision	Likely Direction & Size of Impact
SSI	
Change in disability definition for Children	• Decrease the number of future children who become eligible for SSI. • Reduce the number of future potential applicants who would have qualified under the previous definition of disability for children. • Decrease the current caseload of SSI children by an estimated 100 thousand cases (SSA, 1998b).
Restriction on Benefits for Aliens	• Decrease the number of future aliens who become eligible for SSI. • Reduce the number of aliens eligible for SSI who entered the country after August 22, 1996 or who are "non qualified".[1]
SSI and DI	
Change in benefits for Drug Addicts and Alcoholics (DA&A)	• Reduce the number of future SSI and DI awards and discourage some potential future applicants. • Reduce the current caseload of SSI and DI beneficiaries (167 thousand SSI beneficiaries and 43 thousand DI beneficiaries as of March 1996) who are drug addicts and alcoholics (Lewin, 1998a).
AFDC/TANF	
Fiscal effects of the block grant program	• Increase the number of future SSI and DI beneficiaries by increasing the financial incentive to shift costs to SSA programs, especially during economic downturns.
Work requirements/Time Limits	• Shift some TANF recipients to SSI, if these beneficiaries are having difficulties meeting work requirements. This could include recipients who can not meet work requirements without giving up work that is "off-the-books". • Shift some TANF recipients who have exhausted their benefits because of time limits to SSI and/or DI. • Increase the number of individuals who will meet the work history requirements of DI in the future.
Relatively large SSI payments in comparison to AFDC/TANF payments	• Shift TANF recipients to SSI, particularly in states with relatively small TANF benefits.
Denial of TANF (and Food Stamp) benefits for certain drug-related convictions	• Shift some potential TANF and Food Stamp recipients with a drug related conviction to SSI (or DI).
Food Stamps	
Time Limits for Food Stamp benefits	• May slightly increase the number of disability applicants by those who seek to offset their loss of Food Stamp benefits. This effect may be negligible because of special provisions for people with disabilities.
Restrictions on Aliens	• Limited, if any impact, as a result of changes included in the Agricultural Research Extension, and Education Reform Act of 1998 that as of November 1, 1998, significantly broadened the definition of qualified aliens used in determining food stamp eligibility for non-citizens.
Other	
Child Support	• May increase the number of mothers who apply for SSI benefits to avoid TANF penalties for failure to cooperate with child support. This impact will likely be very small. [2]

1. Non qualified aliens includes those who are undocumented or permanently residing under color of law (PRUCOL). Qualified aliens includes permanent residents, refugees, asylees, and certain other granted condition entry.
2. GAO recently recommended that cooperation with child support be made a condition of SSI eligibility (GAO, 1999)

2. Restriction on Benefits for Aliens

The restriction on SSI benefits for aliens who entered the country after the passage of PRWORA will reduce the number of aliens on SSI. PRWORA made most aliens, with a few exceptions, ineligible for SSI benefits. BBA, however, added several exceptions for aliens, including exclusions for aliens who entered the country prior to August 22, 1996. This action restored benefits to approximately 350 thousand aliens (for a more complete discussion of the impact of welfare reform on aliens, see SSA (1997a) and Kramer (1997). While the BBA changes significantly reduced the impacts of these restrictions on current caseloads, the restrictions on benefits eliminate allowances for future alien beneficiaries. Over time, the cumulative effect of these restrictions might become very substantial.

3. Change in Benefits for Drug Addicts and Alcoholics (DA&A)

The prohibition of payment of disability benefits to individuals whose disability is based on DA&A will reduce the number of individuals with DA&A on SSI and DI. In June and July 1996, SSA sent benefit termination notices to 167 thousand SSI beneficiaries and 43 thousand DI-only beneficiaries designated as DA&A beneficiaries. Any individual who received a notice had the right to appeal their termination or file a new application for disability benefits based on another health condition. As of December 1997, benefits had been terminated for approximately 108 thousand of the targeted SSI recipients and 31 thousand of the DI-only beneficiaries. Perhaps 20 to 30 percent of these beneficiaries, however, would have left the rolls anyway during this period. For a more complete discussion of the impacts of the DA&A policy, see Lewin (1998a).

B. Indirect Effects of Non-SSA Reforms

1. AFDC/TANF Changes

We identified five potential indirect effects of the AFDC/TANF changes on disability programs. The first four potential effects are likely to create movements from AFDC to SSI or DI. The final potential effect may create some shifting in costs across SSI and DI.

First, the change from open ended funding on a matching basis for AFDC to cash assistance block grants for TANF may shift some AFDC/TANF recipients to SSA disability rolls because of changing fiscal incentives and obligations, particularly during an economic downturn. The change from the state/federal sharing arrangement under AFDC to the block grants of TANF has increased the financial incentive for states to shift welfare costs to SSI. In the past, some states and localities have aggressively "shifted" welfare expenditures onto the federal government through identification of and outreach to potential SSI and DI recipients (Lewin, 1995a; Coughlin, et. al., 1994). Increased shifting may be delayed because the economic expansion has alleviated strains on state budgets, but this situation may change substantially in an economic downturn. For example, Kubik (1997a) finds an increase in the number of SSI child recipients in states that coincidentally experienced unexpected increases in state expenditures at the time of the *Zebley* decision in 1990. States that have been the most aggressive in the past may be unable to increase shifting to SSI appreciably, but others may have substantial success.

These problems will be exacerbated if states run out of TANF funding to support their caseloads. In these states, TANF benefit levels may be scaled back and/or some recipients will be cutoff totally from benefits. TANF recipients who are cutoff because of state fiscal problems may be induced to apply for disability benefits.

Second, the tougher TANF work requirement and time limit provisions may shift some AFDC/TANF recipients who are having difficulties meeting these requirements to SSI. AFDC/TANF recipients who are having difficulties meeting work requirements may be induced to apply for SSI benefits, particularly if they have some type of work limitation. Similarly, those who cannot fulfill their work requirements and have exhausted their benefits because of time limits may search for alternative sources of non-time limited transfer income such as SSI. Recent studies of the prevalence of disability in the adult AFDC population found that 11 percent of recipients have a work limiting disability and 19 percent have a functional impairment (Wolfe and Hill, 1993; Adler, 1993). Further, AFDC/TANF recipients who cannot meet work requirements because they are working in an "off-the-books" job may also look to SSI for benefits. Some have suggested that new work requirements under TANF have significantly reduced caseloads because recipient parents cannot continue their unreported jobs and meet new work requirements at the same time, and the earnings from their previously unreported jobs disqualify them (Vobejda and Havemann, 1997).

Third, the combination of tighter eligibility requirements and relatively small AFDC/TANF benefits may make SSI a more attractive alternative for cash transfers. Even though SSI benefits have been greater than AFDC/TANF benefits in the past, many AFDC/TANF recipients (parents and children) may have qualified for SSI but not applied because of ignorance or because they were deterred by the application process. If SSI benefits are viewed as substitutes for AFDC/TANF benefits, the combination of lower benefit levels and tighter eligibility requirements of AFDC/TANF may induce significant numbers of AFDC/TANF recipients to apply for SSI. There is evidence of similar substitution effects from general assistance (GA) to SSI in states that significantly cut their GA programs in the early 1990's (Stapleton et al., 1998). These transitions will be mitigated to some extent because of the direct impacts of SSA reforms for children and drug addicts and alcoholics.

Fourth, denial of TANF (and Food Stamp) benefits for certain drug-related convictions may increase reliance of those with a drug-related conviction and a disability on the SSI program. An individual convicted of a felony for illegal possession, use, or distribution of a drug is barred from receiving TANF and Food Stamp benefits. Some people with prior convictions will turn to disability programs, because they are not eligible for TANF and Food Stamps. The effect of this non-SSA welfare reform will be mitigated by the direct effects of the removal of DA&A as a qualifying condition for disability.

Finally, the institution of work requirements under TANF should increase the number of individuals who satisfy the work requirements of DI (and later, Old Age Survivors Insurance) that could eventually cause some shifting of caseloads from SSI to DI. The institution of work requirements under TANF, if successful, will push more individuals into the workforce. This workforce experience for those who become disabled in the future will allow some to qualify for DI. Many such individuals are likely to have limited earnings, however, and their DI benefits may be low enough for them to also obtain some SSI benefits. In such cases, DI benefits reduce SSI payments dollar for dollar, apart from a $20 disregard for all unearned

income, so the effect is to shift spending from SSI to DI. In other cases, DI benefits may exceed the maximum SSI benefits, resulting in both a shift of costs from SSI to DI and an increase in total payments.

2. Food Stamp Changes

The Food Stamp program changes that tightened eligibility requirements for able-bodied adults may induce some recipients to apply for an SSA disability program to replace the loss of benefits. The institution of work requirements and time limits for able bodied adults will reduce the number of people eligible for Food Stamps and may encourage some individuals with disabilities to apply for SSI and/or DI. The magnitude of this shift is likely to be very small for two reasons. First, some individuals with disabilities will be able to retain their eligibility for Food Stamps by demonstrating that they have a disability without becoming SSI or DI beneficiaries. Second, the benefits from SSI and/or DI are not substitutes for Food Stamps because they are paid in cash and are generally much larger than benefits for Food Stamps. Individuals with severe disabilities who might rely on Food Stamp benefits are most likely either already enrolled in a disability program or reliant on another primary income source.

The Food Stamp program changes that restricted benefits for legal aliens could induce some legal aliens who were in the country prior to the passage of PRWORA to apply for an SSA disability program to replace the loss of benefits. These restrictions, however, will likely have a negligible impact on SSA disability programs for many of the reasons described above. Further, the Agricultural Research, Extension, and Education Reform Act of 1998, as of November 1, 1998, broadened the definition of qualified aliens used in determining food stamp eligibility and restored eligibility to many aliens who might be eligible for SSI (i.e., aged, disabled, and blind legal aliens who arrived in the United States prior to August 22, 1996).

Reductions in the value of Food Stamp benefits for those who continue to be eligible will have a negative impact on the well-being of many SSI recipients. Such changes could also, in principle, have a differential effect on individual well-being under the next best alternative to SSI, and therefore have an impact on the decision to apply for SSI. Differences in effects are likely to be very small in almost all cases, and any impact on applications and allowances is very likely to be negligible.

3. Multiple Program Changes/Other

The new tougher child support enforcement by states may induce some movements by AFDC/TANF recipients who are looking to avoid child support enforcement to SSI. AFDC/TANF and SSI recipients have a strong incentive not to report earnings and income from other sources (e.g., child support) because it reduces their cash assistance. AFDC/TANF recipients with significant unreported income who also have disabilities will find SSI an especially attractive alternative, because there are no work or child support enforcement requirements for SSI recipients. The size of this effect will likely be small, but will depend on the extent to which states exempt parents with disabilities or parents of children with disabilities from work and other requirements.

The magnitude of the effects from the non-SSA welfare reforms on SSA programs will depend substantially on how states actually implement them. Aggressive implementation of work requirements for both TANF and Food Stamps, aggressive implementation of child support enforcement requirements, and aggressive implementation of time limits on benefits will all increase the impact. The size of the impact also will depend on how aggressive the state has been in these areas in the past.

IV. APPROACH TO DEVELOPING EVALUATION DESIGN OPTIONS

In developing the final options for evaluating the effects of the SSA and non-SSA reforms on the DI and SSI programs presented in this report, we conducted a number of activities intended to provide a variety of information that would facilitate the development of the evaluation options. These activities include: a major review of literature and other information; a review of ongoing and proposed state and other welfare reform evaluation efforts; site visits in five states; and the analysis of SSA administrative data by itself, and matched to data from the SIPP. In the sections below, we briefly describe each of these activities. With the exception of the literature, the findings from each of these activities are presented in subsequent chapters and appendices of this report. The findings from the literature review were presented in a previous report for the project entitled *Literature Review and Study Design Report* (Lewin, 1998b).

A. Literature Review

We reviewed and synthesized literature and substantial other material of relevance to the project for the purposes of:

- improving our understanding of reforms and the legislative and programmatic history underlying them;
- developing a conceptual framework to support the analysis of options; and
- understanding the strengths and limitations of various analysis options and the data needed to support them.

Based on this review and synthesis, we further developed a subset of the preliminary options first presented in the *Literature Review and Study Design Report*. The literature review also contributed to the development of plans for the analyses of SSA administrative data and data from the Survey of Income and Program Participation (SIPP) presented in this report, which further supported the development of the final evaluation options presented.

B. Review of Welfare Reform Evaluations

One approach to evaluating the effects of non-SSA reforms on SSI and DI is to build on existing or planned efforts to evaluate state welfare reform initiatives. For this reason, we reviewed a substantial number of planned or ongoing welfare reform assessments in order to identify opportunities for learning about the effects of those reforms on SSI and DI. The criteria we used in selecting the assessments for review include the following: the likely impact on SSI or DI of the reforms included in the assessment; evaluations of leading-edge programs enabling early assessment of TANF changes, such as benefit time limits; the quality of the design for determining the impacts of program changes; and broad assessments that provide information of

relevance beyond specific states, particularly if they include information on participation in other programs.

C. State Site Visits

We conducted three-day site visits to each of five states: California, Connecticut, Florida, Michigan, and Wisconsin. The primary purpose of the visits was to gain a better contextual understanding of the impact of non-SSA welfare reforms on SSA programs. A second purpose of the visits was to obtain detailed information on: on-going welfare evaluations of interest; the availability of state or local administrative or survey data; and the potential for linking the state data to SSA administrative data. The nature and availability of state-level data on the populations affected by the legislation have implications for some of the potential study designs for quantitatively assessing the impact of non-SSA welfare reform on the SSA programs.

In selecting the five states, we considered the following factors: size of the welfare population; "interesting" state waiver provisions outside the basic federal requirements; program time limits; stringent work requirements; availability of transitional Medicaid or child care; subsidized employment opportunities; evidence of past shifting of welfare recipients from state to federal rolls; and region of the country. In each state, we conducted interviews with representatives from the following types of agencies and organizations: entities conducting state AFDC waiver and demonstration projects in effect prior to the passage of PROWRA; state TANF programs instituted after PROWRA; state and local General Assistance programs; state Medicaid programs; SSA field offices; and advocacy groups and local service providers.

D. Analyses of the Pre-Reform Period

We conducted two analyses of the pre-reform period. In the first, we examined national and state adult SSI disability application trends, by sex and age, for the period from 1988 to 1997. This includes both descriptive analysis and pooled time-series analysis of the state-level data. In the second, we used data from the 1990, 1991, 1992 and 1993 SIPP panels matched to SSA administrative data. This includes both descriptive analyses and econometric (hazard) analyses of SSI applications and allowances. The SIPP analyses make use of the fact that we can observe the entire SSI participation history of each respondent in the administrative data.

Several important findings emerge from this analysis. First, there was very substantial flow of program participants from AFDC to SSI during the pre-reform period. Of the young women (age 18 – 40) who were AFDC recipients when first observed in the SIPP panels, 7.5 percent were eligible for at least one SSI payment in the 1996-97 period. Some of these women (about two percent) had received SSI income before they were observed in SIPP, but most had not. While this is a relatively small share of AFDC recipients, the number of people it represents is large relative to the number of young female SSI recipients. For instance, it is nearly half as large as our estimate of the average young female SSI caseload in the 1990 – 1993 period.

The numbers are larger for children who were identified as AFDC recipients via SIPP. The number of these children who received an SSI payment in 1996-97 is almost 80 percent of the estimated average child SSI caseload in the 1990 – 1993 period. The strength of the finding for children is not surprising, given *Zebley* and subsequent changes to the child eligibility criteria.

The strength of the finding for young women is more difficult to explain. It could be attributable to historically high transitions from AFDC to SSI. We found, however, that only 24.6 percent of young women who were SSI recipients when observed in SIPP reported past AFDC receipt. In contrast, of those young women who received first SSI allowances after they were observed in SIPP, 42.7 percent were past AFDC recipients. We did not find any evidence that AFDC reforms prior to PRWORA had contributed to this shift, although this possibility cannot be rules out on the basis of our analysis.

We also found that it is very difficult to disentangle the causes of SSI application and allowance growth from 1988 through 1993, or the sharp declines thereafter. The economy, aging of the baby boom generation, and various state and federal policies are clearly significant contributors to this pattern. We do not, however, have very good knowledge about their relative importance, as well as the importance of other factors (e.g., changes in the number of families in female-headed households). This makes it problematic to use analysis of this period for the purpose of generating the counterfactual SSI outcomes in the post-reform period. Although future efforts may be more successful in explaining past growth than the exploratory analysis reported here, the findings have discouraged us from recommending pooled time-series analysis of state data as a primary methodology for the evaluation.

The econometric analysis of applications and allowances using the four matched SIPP/SSA samples (pooled) demonstrates that this type of analysis is feasible, and provides a foundation for a viable evaluation option. Many of the characteristics of SIPP respondents who are at-risk for SSI when they are first observed are predictive of later SSI applications and allowances. These include education, family status, program participation and income variables as well as self-reported disability and health.

The econometric analysis also provides evidence of an upward shift in the probability of SSI application among young mothers relative to the corresponding probability for other young women from 1991 to 1995, but a downward shift of roughly equal magnitude from 1995 to 1997. Similar findings exist for men. The analysis also shows that it is difficult to identify the cause of such shifts via this methodology. A major limitation of the analysis is that the number of applications or allowances from the pooled SIPP samples in each state are too small in each year to precisely estimate the effects of state factors, including welfare reforms.

V. STRUCTURE OF THE REPORT

The remaining chapters of this report are organized as follows:

- In ***Chapter 2***, we present a summary of the findings from the review of state and other welfare reform evaluations. Additional information on these evaluations is also contained in ***Appendix B***.

- In ***Chapter 3***, we present a summary of the findings of the site visits in five states. Full reports for each state are provided in ***Appendix C***.

- In ***Chapter 4***, we present a summary of the findings from analyses of national and state-level SSI application trends during the pre-reform period. Additional data and information from these analyses are presented in ***Appendix D***.

- In ***Chapter 5***, we present a summary of the findings from analyses of matched SSA administrative and SIPP data that allow the direct measurement of transitions from AFDC to SSI and analysis of the characteristics of SSI and AFDC recipients. Additional data and information from these analyses are presented in ***Appendix E***.

- We conclude in ***Chapter 6*** with a presentation of the options developed to evaluate the effects of the non-SSA and SSA reforms on the disability programs. These include options using SSA administrative data; using matched SIPP/SSI data; using existing welfare reform evaluations; and through the tracking of transitions to SSI in specific states. Technical notes are in ***Appendix F.***

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CHAPTER 2
WELFARE REFORM EVALUATIONS

I. INTRODUCTION

A. Overview

In this chapter we review existing or planned studies to evaluate state welfare reform initiatives that could be informative to SSA's effort to evaluate the impact of welfare reform on the Supplemental Security Income (SSI) program. Several evaluations are identified that could be useful in their current stage, or with some modifications.

There are four potential areas where these studies could be informative for SSA's purposes. First, some evaluations are already analyzing transitions from welfare to SSI. Hence, the results from these evaluations could be directly used to provide evidence of the preliminary impacts of state welfare reform changes on SSI. Second, some evaluations are collecting information on SSI participation through a survey and/or administrative records. While this information may not be central to the study's analysis, SSA could build upon current efforts to estimate the impacts of reforms on SSI. Third, some studies are collecting and linking administrative records using Social Security Numbers (SSNs) for Temporary Assistance for Needy Families (TANF), Food Stamps, Medicaid, and other social services. Studies that are using preexisting linked files could be very useful to SSA because, presumably, these linked extracts could be linked to SSA records.[4] Finally, in evaluations still gathering survey information, it may be possible for SSA to add or modify questions to provide insight on information related to SSA's purposes.

B. Criteria for Selecting Evaluations

We used three criteria to identify assessments that would be useful for SSA's purposes. The first criterion was that the program being evaluated had to contain "leading edge" welfare reform changes, such as strong work requirements and/or short time limits on benefits.[5] These evaluations are important because the impacts of welfare reform on SSI caseloads will likely be largest in states with the strongest interventions.

The second criterion was a strong project design. A number of the studies we reviewed used a classical experimental design. These experimental designs provide an opportunity to track the SSI claims and allowance experience using treatment and control group members, thereby providing the most definitive information on the effect of specific state reforms on SSI. Evaluations based on descriptive studies are also of interest because they provide broad descriptive information on welfare reform implementation, including information on large

[4] While we investigated the possibilities of linking state administrative data in our reviews, we did not investigate the potential legal obstacles that may be encountered if such a link were attempted.

[5] In addition, SSA may want to identify programs that have special components for persons with disabilities (e.g., work exemptions for the incapacitated). While these components may affect transitions into SSI, the direction of the change is not clear. Such components may increase the number of transitions to SSI if the state has an interest in removing these individuals from state TANF programs, or it may decrease transitions by allowing persons with disabilities to stay on TANF for a longer period of time.

samples of affected individuals. Descriptive studies could also be important for providing background information for a future modeling effort. Finally, some evaluations are conducting ethnographic studies that provide detailed information on the experiences of small affected groups.[6] These studies could be important for obtaining information that may not be available in survey or administrative data.

The third criterion was whether the evaluation focused on a specific demographic group that may be disproportionately affected by SSA and non-SSA welfare reforms. Examples of such groups include children, immigrants, and substance abusers.

In general, we selected evaluations that satisfied one or more of our criteria.[7] Some evaluations were excluded, however, because they would be of limited interest for SSA's purposes. For example, some evaluations were not included because of their project design. Other studies were excluded because they focused on very narrow populations.[8]

C. Methodology for Reviewing Welfare Reform Evaluations

We gathered detailed information on the evaluations selected for review from the Internet, welfare reform conference volumes, and, when available, preliminary reports from the evaluator.[9] While the focus of our review is to provide information that could be useful in understanding how state specific welfare reforms impact SSI, we also provide general project summary information. This summary includes information on project contacts (including the phone number of the project leader), program descriptions (e.g., key components of the state welfare law), project descriptions, a list and summary of the studies analyzed within the project (e.g., process study, impact study), and a summary of the (planned) administrative and survey data sources.

We sent letters to each lead evaluator to obtain more detailed information on each project. These letters contained evaluation specific questions regarding information that could be beneficial to SSA's purposes (e.g., whether SSI information was being collected, types of data used, outcomes evaluated). We attached a preliminary version of our evaluation summaries to each letter to obtain feedback from each evaluator on whether the information in the summary needed to be corrected or updated. We also provided each evaluator with a brief summary of our project.

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[6] Many studies also conducted focus group sessions and site visits. In general, very little information was gathered in site visits or focus groups regarding SSI participation. Hence, the results from focus group sessions and site visits will probably have little value for SSA's purposes.

[7] We excluded at least one project- HCFA's evaluation of the impact of welfare reform on Medicaid populations- because it was only recently awarded at the time of the report. This project could be of interest to SSA's purposes, however. The data analysis portion of this project will include examination of HCFA-2082 state data, the National Health Care Survey (NCHS), and SSA administrative data matched to Medicaid data. The project will also closely examine the effects of welfare reform on Medicaid in ten states. Mathematic and HCFA have yet to identify the ten focus states.

[8] For example, one project that we reviewed, but did not include was the South Carolina "Healthy Start Program." While this evaluation had an interesting project design (experimental) on a population disproportionately affected by both SSA and non-SSA welfare reforms (children), the target population was very small (four sites in rural South Carolina).

[9] These sources are cited in ***Appendix Exhibit B.25***.

Each letter was followed up with a conference call. We were able to contact almost all of the organizations that were conducting evaluations.[10] Project leaders and/or staff provided important feedback on our project summaries and answered the questions raised in our letter. We are very grateful for the time that each evaluator took to carefully review the information sent and to answer our questions. The information gathered was greatly enhanced by their participation. Some evaluators mentioned that the phone calls were also beneficial for their purposes because the conversations highlighted the importance of participation in SSA programs as an outcome of welfare reform.

D. Welfare Reform Evaluations Selected

In total, we reviewed 22 welfare reform studies that can be divided into four general categories.[11] These categories include:

- State welfare reform evaluations;
- State/County welfare leavers projects;
- Multi-State/County welfare reform evaluations; and
- Immigrant welfare reform evaluations;

In ***Exhibit 2.1***, we list the evaluations reviewed by category of study and primary evaluator. A detailed summary of the all the evaluations reviewed appears in ***Appendix Exhibits B.1-B.22***.

The evaluations in the state welfare reform category are all funded by the Administration for Children and Families (ACF). The purpose of these evaluations is to examine welfare reform demonstrations that began prior to the implementation of TANF. All of the ACF projects selected for review had an experimental design. In addition, some of these evaluations were also funded to perform specific analyses for children.

The evaluations in the state/county welfare leavers projects category include fourteen projects recently awarded by the Office of the Assistant Secretary for Planning and Evaluation (ASPE). The focus of these projects is to study welfare reform outcomes for those who leave TANF. These awards were made in September 1998. Unfortunately, we only obtained limited information for each individual welfare leavers project because of the recent award date. Nonetheless, these projects could be very import to SSA in evaluating transitions from state welfare programs to SSI.

The evaluations in the multi-state/city welfare reform category, unlike the evaluations in the first two categories, had several funding sources and there were large variations in project design and scope of work. Some of the evaluations selected used an experimental design to evaluate the impacts of various work requirements on TANF recipients. Most studies, however, relied primarily on a descriptive design to provide a broad overview of the implementation of welfare reform, compare differences in outcomes across sites, and/or to evaluate effects on specific

[10] The one exception is the California State University Employment Readiness Demonstration Project that we learned about on our site visits to California.

[11] This includes 21 individual project summaries for evaluations in categories (1), (3), and (4), and one project summary for all thirteen of ASPE's Welfare Leavers Projects in category (2).

groups (e.g., hard to serve cases, children).[12] In a small number of cases, the evaluations were augmented with ethnographic studies.

The evaluations in the immigrant category include studies that focus specifically on immigrants in large cities. The methodology used in these studies may be applied to a broader evaluation of the impacts of welfare reform on immigrants in larger areas. We created a special category for immigrant evaluations because there is little focus on immigrants in the other evaluations. Some of the evaluations in the first three categories do, however, provide information on the impacts of welfare reform on special demographic groups of interest (e.g., children and substance abusers).

E. Summary of Welfare Reform Evaluations

In ***Exhibit 2.2***, we provide a summary of all the projects reviewed. The first three columns of the exhibit provide descriptive information on the three criteria used to select the assessments. The fourth column provides a summary of the SSI information gathered by each project. Because we did obtain some limited information from individual welfare leaver projects on links to SSI, we provide information for all welfare leaver projects. In most welfare leaver projects, however, links to SSI were unknown. In some cases, there was an overlap between the state welfare evaluations and welfare leavers projects that could be useful. To identify these cases, we added a fifth column that identifies states that have both welfare leaver projects and state welfare reform evaluations. In states where there is overlap, we provide information from both the state welfare evaluations and welfare leaver projects on SSI data collected.

F. Organization of the Chapter

In the remaining sections of this chapter, we summarize the results from our review and make suggestions regarding the evaluations that are most promising for SSA's purposes. In Sections II through V, we highlight our findings from the state welfare reform evaluations, state/county welfare leavers projects, multi-state/city evaluations, and immigrant evaluations. In Section VI, we provide a summary of our suggested findings.

II. STATE WELFARE REFORM EVALUATIONS

A. Overview of ACF Funded Projects

Projects in seventeen states were funded by ACF to study the implementation and effectiveness of state welfare demonstrations that began operating prior to the implementation of TANF. All of the states selected had policies that promoted self-sufficiency (e.g., time limited assistance, strong work requirements, strong sanctions for non-participation), though there were some significant variations across state policies. These states included Arizona, Connecticut, Florida, Illinois, Indiana, Iowa, Maryland, Minnesota, Nebraska, New Hampshire, North Carolina, North Dakota, Ohio, Texas, Vermont, Virginia, and Wisconsin.

[12] Some of the "hard to serve" cases include welfare recipients who are substance abusers.

Exhibit 2.1
Summary of Evaluations Reviewed

Study	Evaluator
State Evaluations	
Arizona EMPOWER Welfare Reform Program Evaluation	Abt Associates Inc.
Connecticut's Jobs First: Welfare Reform Evaluation Project	Manpower Demonstration Research Corporation
Florida Family Transition Program (FTP) Evaluation	Manpower Demonstration Research Corporation
Indiana Manpower Placement and Training Program Evaluation	Abt Associates, Inc.
Iowa Family Investment Plan Evaluation	Mathematica Policy Research, Inc.
Minnesota Family Investment Programs	Manpower Demonstration Research Corporation
Nebraska's Employment First Program Evaluation	Mathematica Policy Research
Texas ACT Welfare Reform Review Evaluation	Texas Department of Human Services
Vermont Welfare Restructuring Project Evaluation	Manpower Demonstration Research Corporation
Wisconsin's Pay for Performance/Self-Sufficiency First Evaluation	Institute for Research on Poverty
Welfare Leavers Projects	
Projects include: Arizona, Cuyahoga County, OH, District of Columbia, Florida, Georgia, Illinois, Los Angeles County, Massachusetts, Missouri, New York, San Mateo County, CA, South Carolina, Washington, Wisconsin	Multiple

Exhibit 2.1 (continued)
Summary of Evaluations Reviewed

Study	Evaluator
Multi State/City Projects	
Assessing the New Federalism	The Urban Institute
Project on Devolution and Urban Change	Manpower Demonstration Research Corporation
Johns Hopkins University Welfare Reform Three City Study	Johns Hopkins University
National Evaluation of Welfare-to-Work Strategies	Manpower Demonstration Research Corporation
California Greater Avenues for Independence	Manpower Demonstration Research Corporation
Los Angeles Replication Study	Manpower Demonstration Research Corporation
Employment Readiness Demonstration Project (ERDP) Evaluation	California State University-Bakersfield
Welfare to Work Evaluation	Mathematica Policy Research
Wisconsin New Hope Project[13]	Manpower Demonstration Research Corporation
Immigrant Evaluations	
Immigrants in New York Evaluation	The Urban Institute
Impact of Welfare Reform on Immigrants	The Urban Institute

[13] New Hope is not a welfare reform evaluation, but rather a study of a community based program that offers an alternative to persons on welfare (and other low-income individuals). However, the individuals in the study are affected by welfare reform policies, and the types of data collected for the New Hope evaluation are similar to those for state welfare reform studies.

Exhibit 2.2
Evaluations of Non-SSA Reforms

Evaluation	Program Design	Experimental Design	Special Focus on Children, Substance Abusers or Immigrants[14]	Administrative or Survey link to SSI Program Information	Welfare Leavers Project
State Welfare Reform Studies (including some Welfare Leavers Projects)					
Arizona	Time limits, family cap, extended transitional Medicaid and child care	X		In the ACF study, analyses of survey data have been conducted on treatment and control group members who transitioned into SSI. SSNs are available for adults in administrative data. It is not known if information regarding SSI will be gathered in the Welfare Leavers Study.	X
Connecticut	21-month time limit, all earned income disregarded up to the poverty line, and modified family benefit cap.	X	X	The survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults and children in administrative data.	
Florida	Strict time limit (24 or 36 months out of any 60 months, depending on recipient characteristics and previous time on assistance) and generous income disregards in a low-benefit-level state.	X	X	In the ACF study, the survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults and children in administrative data, though children were not used in the evaluation It is not known if information regarding SSI will be gathered in the Welfare Leavers Study.	X

[14] Includes evaluations from either the child impact studies, "hard-to-serve" population, or immigrants.

Exhibit 2.2 (continued)
Evaluations of Non-SSA Reforms

Evaluation	Program Design	Experimental Design	Special Focus on Children, Substance Abusers or Immigrants	Administrative or Survey link to SSI Program Information	Welfare Leavers Project
State Welfare Reform Studies (including some Welfare Leavers Projects)					
Indiana	24-month time limit and family benefit cap.	X	X	Survey included a question for whether the respondent received income from SSI, but no differential is made whether the SSI is for the child or adult. SSNs are available for adults and children in administrative data. Survey data is linked with administrative data.	
Iowa	Strong work requirements (includes severe sanctions for non-participation) and expanded earnings disregards.	X	X	There is a single income category for SSI and DI income for every individual in the household. SSNs are available for adults in administrative data.	
Minnesota	Generous income disregards, eligibility for supplemental benefits up to 140 percent of poverty, and intensive employment and training requirements for longer-term recipients.	X	X	Survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults and children in administrative data.	
Nebraska	Intensive case management, time limits, extended transitional benefits	X		Linked administrative records on SSI receipt are available for all household members. Survey questions on SSI receipt are also asked. SSNs are available for adults and children in administrative data.	
Texas	Time limits, personal responsibility agreements	X		Small-scale surveys will ask questions regarding SSI receipt. SSNs are available for adults and children in administrative data.	

Exhibit 2.2 (continued)
Evaluations of Non-SSA Reforms

Evaluation	Program Design	Experimental Design	Special Focus on Children, Substance Abusers or Immigrants	Administrative or Survey link to SSI Program Information	Welfare Leavers Project
State Welfare Reform Studies (including some Welfare Leavers Projects)					
Vermont	Strict work requirements, generous earnings disregards	X		Survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults and children in administrative data, though SSA data would be needed to determine if the individual is a child or an adult.	
Wisconsin	Diversion strategy, strict work requirements	X		In the ACF study, no data is being gathered about SSI participation. SSNs are available for adults in administrative data. It is not known if information regarding SSI will be gathered in the Welfare Leavers Study.	X
Welfare Leavers Projects (excluding those with state welfare reform evaluations)					
District of Columbia	Little variation from the federal time limits or work requirements.			Unknown	X
Georgia	4-year time limit, work requirement no later than 24 months after first receiving assistance, family cap, diversion payments of 1-5 months.			Unknown	X

Exhibit 2.2 (continued)
Evaluations of Non-SSA Reforms

Evaluation	Program Design	Experimental Design	Special Focus on Children, Substance Abusers or Immigrants	Administrative or Survey link to SSI Program Information	Welfare Leavers Project
Welfare Leavers Projects (excluding those with state welfare reform evaluations)					
Illinois	Families with children aged 13 or older have 24-month time limit (otherwise 60-month time limit), family cap, and transition childcare			Unknown	X
Los Angeles and Cuyahoga County	Comparison of outcomes for Welfare Leavers across two counties in Ohio and California.			Unknown	X
Massachusetts	24-month time limit, community service after 2 -months, family cap.			Unknown	X
Missouri	48-month time limit, extended child care, diversion payments			Unknown	X
New York	Diversion payments, expanded earnings disregards, immediate work requirements.			Full population administrative records from SSI will be used in the welfare leavers analysis	X
San Mateo County	Comparison of outcomes for welfare leavers across three counties in California.			Unknown	X
South Carolina	Continuation of an ACF funded Project			Unknown	X
Washington	Transition child care if income does not exceed 175% of fed. Poverty level, $1500 diversion payment limit.			Unknown	X
Multi-state/city Welfare Reform Evaluations					
New Federalism	Broad Assessment of Devolution			Survey of American Families includes questions regarding individual SSI income receipt. SSNs are not available on file.	

Exhibit 2.2 (continued)
Evaluations of Non-SSA Reforms

Evaluation	Program Design	Experimental Design	Special Focus on Children, Substance Abusers or Immigrants	Administrative or Survey link to SSI Program Information	Welfare Leavers Project
Multi-state/city Welfare Reform Evaluations					
Project on Devolution and Urban Change	Comparison of impacts of TANF block grants across major cities in different states.			Survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults in administrative data.	
Welfare Reform Three City Study	Broad assessment of Welfare Reform impacts in three cities. Analyze impacts of policies related to employment, schooling, training, residential mobility, and fertility.		X	Current survey includes questions regarding whether anyone in the household received income from SSI. No distinction is made for whether the income is for the respondent or another person in the household. SSNs are not available.	
National Evaluation of Welfare to Work Strategies (Jobs Evaluation)	Welfare to Work Intervention	X		Survey included a question regarding whether the respondent or any household member received SSI. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults in administrative data.	

Exhibit 2.2 (continued)
Evaluations of Non-SSA Reforms

Evaluation	Program Design	Experimental Design	Special Focus on Children, Substance Abusers or Immigrants	Administrative or Survey link to SSI Program Information	Welfare Leavers Project
Multi-state/city Welfare Reform Evaluations					
California Greater Avenues for Independence Evaluation	Time limits, labor force attachment model	X		Survey includes question on whether the respondent or another person in the household received income from SSI. No distinction is made for whether the income is for the respondent or another person in the household. SSNs are available for adults in administrative data.	
Los Angeles Replication Study	Evaluation of employment strategies in Los Angeles County	X		Survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults in administrative data.	
Employment Readiness Demonstration Project	Targeted services approaches for persons with multiple barriers to employment in eight counties in California	X	X	State administration data on SSI participation is available. SSNs are available for adults in administrative data.	

Exhibit 2.2 (continued)
Evaluations of Non-SSA Reforms

Evaluation	Program Design	Experimental Design	Special Focus on Children, Substance Abusers or Immigrants[15]	Administrative or Survey link to SSI Program Information	Welfare Leavers Project
Multi-state/city Welfare Reform Evaluations					
Welfare to Work Evaluation	Welfare to Work Strategies	X	X	Surveys will include questions regarding SSI income sources.	
New Hope Project[16]	Provides financial incentives for increased earnings	X	X	Survey included a question regarding whether the respondent or any household member received SSI. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults in administrative data.	
Immigrant Welfare Reform Evaluations					
New York City Immigrants Study	Legal Status, Incomes, and Taxes Study		X	Survey data from CPS contains SSI information, but, in cases with children in the household, no distinction is made for whether the income is for the adult or the child.[17]	
Impact of Welfare Reform in New York City and Los Angeles	Economic and health status of immigrants, their communities, and/or, organizations that serve them		X	Telephone survey includes information on SSI participation.	

[15] Includes evaluations from either the child impact studies, "hard-to-serve" population, or immigrants.

[16] New Hope is not a welfare reform evaluation, but rather a study of a community based program that offers an alternative to person on welfare (and other low-income individuals). However, the individual in the study are impacted by welfare reform policies and the types of data collected for the New Hope evaluation are similar to those for state welfare reform studies.

[17] Data from the matched CPS/SSA files could be used to identify individual SSI receipt.

There were two types of evaluations funded by ACF. The first included "Track 1" studies. All of the Track 1 studies include impact evaluations that use a random assignment methodology. The experimental cases were subject to the welfare reform policies (as modified by state waiver policies), while control group cases were subject to prior AFDC policies. The common outcomes researched for Track 1 studies include employment, earnings, income, welfare income, welfare participation, and usage of "other" services (e.g., training programs). Because of the experimental design of the impact studies and the types of state programs researched, all of the Track 1 state evaluations could be interesting for SSA's purposes. The Track 1 states are Arizona, Connecticut, Florida, Indiana, Iowa, Minnesota, Texas, Vermont, and Wisconsin.

The second type of evaluation funded by ACF included "Track 2" studies. Unlike Track 1 studies, Track 2 studies address a wide variety of research questions. Some Track 2 studies focus on broader questions relating to the impacts of welfare reform on self-sufficiency, welfare receipt and usage of other programs, whereas others focus on more specific issues such as post employment services. While all of these studies provide a process analysis on the implementation of state welfare reform, some do not have an impact study.[18] We did not review Track 2 studies that exclude an impact analysis. Some Track 2 states are also funded under Track 1 studies (Iowa and Minnesota). The Track 2 states are Illinois, Iowa, Maryland, Minnesota, Nebraska, New Hampshire, North Carolina, North Dakota, Ohio, and Virginia.

Child Impact Studies are also being conducted to augment five state welfare reform demonstration evaluations to assess the impacts of welfare reform policies on child well-being. While most of the welfare demonstrations included some child outcome measures, these measures tended to vary across projects in scope and depth. The purpose of the Child Impacts Studies is to provide detailed information on children and family processes that is comparable across states. The five Child Impact states include Connecticut, Florida, Indiana, Iowa, and Minnesota. These five states are all Track 1 studies.

One major advantage of these studies is that they could provide important information on how children are affected by welfare reforms across states. ***Appendix Exhibit B.23*** illustrates some of the common measures that are being collected across Child Impact Study states. The questions regarding the health status of the child could be particularly important in trying to determine how many children with disabilities exist in different state welfare populations. Further, children living in families that received welfare could be compared across states. There may be, for example, state policies (or advocacy groups) in one state that are more aggressive than those in another state in identifying children with disabilities who live in welfare families.

B. Summary of Projects Selected for Review

We selected ten state welfare reform evaluations for review. The evaluations selected include:

- Abt Associates' Arizona EMPOWER Welfare Reform Program Evaluation;
- Manpower Demonstration Research Corporation's (MDRC) Connecticut Jobs First Welfare Reform Evaluation Project;

[18] For those Track 2 studies with an impact study, some used an experimental design whereas others used a non-experimental approach.

- MDRC's Florida Family Transition Program Evaluation;
- Abt Associates' Indiana Manpower Placement and Training Program Evaluation;
- Mathematica Policy Research's Iowa Family Investment Plan Evaluation;
- MDRC's Minnesota Family Investment Program Evaluation;
- Mathematica Policy Research's Nebraska Employment First Program Evaluation;
- Texas Department of Human Service's Texas ACT Welfare Reform Review Evaluation;
- MDRC's Vermont Welfare Restructuring Project Evaluation; and
- Institute for Research on Poverty's Wisconsin Pay for Performance/Self-Sufficiency First Evaluation;

The ten evaluations include all nine of the Track 1 studies (Arizona, Connecticut, Florida, Indiana, Iowa, Minnesota, Texas, Vermont, and Wisconsin).[19] All of the Track 1 studies were of interest because of their project design (experimental) and the structure of their state welfare reform programs. The one Track 2 evaluation selected that was not also a Track 1 evaluation is Nebraska. Similar to the Track 1 studies selected, the Nebraska evaluation also uses an experimental design for its impact evaluation and has an interesting program design. The remaining Track 2 studies either did not have an impact study or the impact study was very limited in nature.[20]

All of the state welfare reform evaluations use administrative data from multiple sources. In almost all of the cases, (Connecticut, Florida, Indiana, Minnesota, Nebraska, Texas, and Vermont), these records contained SSN for all adults and children.[21] Further, all of the state evaluations, with one exception, had worked with, or are planning to work with, administrative data linked across multiple programs (e.g., Food Stamps, Unemployment Insurance wage records, employment and training programs).[22]

All of the state welfare reform evaluations also contain a survey component that asked questions regarding SSI, with the exception of the Wisconsin evaluation. In Indiana, however, the individual receiving SSI was not identified in the initial survey. In Texas, survey questions were asked regarding SSI participation, but the sample sizes of the survey were too small for an analysis that would serve SSA's purposes.[23] In the remaining states (Arizona, Connecticut, Florida, Iowa, Minnesota, Nebraska, and Vermont), income from SSI, DI, and "Aid for the Disabled" was all included in one category.[24] In all of these states, however, the individual

[19] A detailed summary of the ten state welfare evaluations reviewed is provided in ***Appendix Exhibits A.1-A.10***.

[20] One possible exception is the evaluation of the Virginia Independence Program. In this evaluation, an experimental impact study is being conducted that may be of interest to SSA. Factors being analyzed include time limits, impacts of work requirements, and the dynamics of their TANF caseloads. Unfortunately, we were unable to contact the evaluator by the time that our report was being written.

[21] In the remaining three states, Arizona, Iowa, and Wisconsin, it was not clear whether there were SSNs for children.

[22] We did not obtain complete information on the administrative data files in Iowa.

[23] An ethnographic study was conducted, however, on a small sample of families in Texas that obtained information on SSI income sources.

[24] The evaluation in Florida was the only study that mentioned gathering information regarding whether individuals *applied* for benefits from disability programs.

receiving the disability benefits is identified. While SSI information is being gathered in these state evaluations, the only analysis of transitions from TANF to SSI occurred in the Arizona evaluation (discussed in more detail below). Upcoming surveys are still planned for the Indiana and Connecticut evaluations.

All of the state welfare reform evaluations contained strong work components and seven had time limit provisions (Arizona, Connecticut, Florida, Indiana, Nebraska, Texas, and Vermont). In every state except Nebraska, the experimental analysis focus on individuals who were subject to work requirements and/or time limits (the comparison group included those who were subject to the rules under the old AFDC program).[25] In Iowa, Minnesota, and Vermont, comparisons were made across multiple groups. In general, the multiple groups in these studies included recipients who were eligible under the prior AFDC laws, recipients who were eligible for training under the new program but not subject to time limits or work requirements, and recipients who were eligible under the new rules of the state TANF program. State with multiple comparison groups in their experimental design may provide an extra opportunity for SSA to identify multiple policies that affect transitions from AFDC/TANF to SSI.

C. Suggestions

The Arizona evaluation is of immediate interest for SSA's purposes because the evaluators have already gathered information on SSI outcomes. Abt uses survey data on a sample of 801 persons who were (approximately) evenly divided between control and experimental group to analyze transitions into SSI. Individuals in the experimental groups followed the rules of the Arizona Empower program, which include strong work requirements and a time limit on benefits of 24 months (control group individuals were subject to the old AFDC rules). In preliminary findings, Abt finds no statistical difference across control and experimental groups in SSI participation. In addition to these findings, Abt also has the ability to link their survey data to administrative records and it may be possible to link SSA administrative data to state data. Hence, this evaluation could potentially be very informative for SSA's purposes in its current form, as well as in a potential future analysis.

The Nebraska evaluation could be of interest in the near future for SSA with some minor modifications because they have linked state administrative records that contain information on SSI receipt. Mathematica has access to a state database with linked administrative records from Food Stamps, AFDC, Employment First program cases, and Assistance for the Aged Blind or Disabled/SSI files. This file includes information on every person in the household in a "master case" file, including children. While transitions into SSI are not one of the outcomes being analyzed, the project leader stated that it would not be difficult to use state files to follow these transitions in the future. One drawback of the Nebraska study, however, is that its experimental design is limited in scope.[26]

Of the remaining state welfare reform evaluations, Connecticut, Florida, Iowa, Minnesota, and Vermont are all of interest for SSA's purposes with some modifications because of their unique

[25] The experimental design in Nebraska focused on employment training versus work first issues.

[26] There are two reasons why the Nebraska's evaluation is limited in scope. First, it only includes individuals in Omaha and two surrounding counties. Second, the experimental design focused on work first versus training outcomes.

project design, interesting program design, child impact analyses (except Vermont), linked administrative data sources and survey questions regarding SSI participation. The last three evaluations, Texas, Indiana, and Wisconsin, may only be of marginal use unless links can be created between SSA administrative data and these state databases. Even if such links can be created, the evaluation in Wisconsin will most likely be of limited use because it has a relatively small administrative database and is conducted in only four sites.

III. WELFARE LEAVERS PROJECTS

A. Overview of Welfare Leavers Projects

The fourteen welfare leavers projects funded by ASPE are designed to provide information on the short- and long-term outcomes of welfare reform on individuals and families who leave TANF.[27] In addition, a subset of these projects will focus on populations that apply for cash benefits but are never actually enrolled in TANF programs because of non-financial eligibility requirements or diversion programs. Projects will also attempt to identify and provide information on people who appear to be eligible for an income support program but are not enrolled.

The analysis for these projects is descriptive. A combination of administrative and survey data will be used in all studies. In many cases, attempts will be made to link administrative data across programs. In addition, some of the projects will build upon existing databases from other projects.

These projects could potentially be very informative for SSA because they focus on individuals making transitions from TANF programs. Because work on these projects has only been recently initiated, much of the information on individual state/county studies is preliminary. Nevertheless, the preliminary summaries of these projects provided from the Internet and conference meetings suggest that the evaluations will produce information of value to SSA. A brief summary of these projects is provided in ***Exhibit 2.3.***

B. Suggestions

SSA may have an opportunity to contact project leaders regarding the types of survey questions to be asked. Unfortunately, we do not know the timeline for when these surveys will be put in the field. If the surveys have not yet been fielded, SSA may want to request that each survey not only ask separate questions regarding SSI participation, but that the survey also identify who in the household is receiving benefits (e.g., child vs. adult beneficiary). Further, SSA may want to request that questions be added regarding recent applications for SSI.

Based on the information available, there are some individual welfare leavers evaluations that could be of particular interest for SSA in the near future. Most notably, the District of Columbia, New York, and Wisconsin evaluations will include matched administrative data from TANF, SSI, Food Stamps, and Medicaid. These projects could be potentially directly relevant for SSA

[27] A summary of all thirteen welfare leavers projects is provided in ***Appendix Exhibit A.11***.

Exhibit 2.3
ASPE Welfare Leaver Evaluation

Evaluation	Evaluator	Program Design	Summary
Arizona	None yet	Time limits, family cap, extended transitional Medicaid and child care	The goal of this project is to evaluate (1) whether the sanctions and benefits of the Arizona waiver are successful in motivating participation and employment; (2) whether progressive sanctioning, ending in full-family sanctions motivate employment; and (3) whether families take advantage of the 24-month transitional child care and Medicaid benefits.
Cuyahoga Co., Ohio	Manpower Demonstration Research Corporation and Case Western Reserve University	Comparison of outcomes for Welfare Leavers across two counties in Ohio and California.	Manpower Demonstration Research Corporation (MDRC) will use data from the Urban Change project for a two-site comparison study between Cuyahoga County and the Los Angeles County. The sample includes cohorts from the last calendar quarter of 1996 and first calendar quarter of 1998. The data for the project includes up to ten years of full population administrative data developed for the Urban Change project and mixed-mode sample survey drawn from the second cohort in September 1999.
District of Columbia	The Urban Institute	Little variation from the federal time limits or work requirements.	The Urban Institute will use administrative data from DC's current integrated system to evaluate the impact of welfare reform in DC on individuals whose welfare cases have been closed at least two months. Data are available from 1992 onward. In addition, the study will also include focus groups of individuals who left TANF.
Florida	Florida State will assist with the Survey	Strict time limit (24 or 36 months out of any 60 months, depending on recipient characteristics and previous time on assistance) and generous income disregards in a low-benefit-level state.	This project will address three populations potentially affected by welfare reforms: (1) welfare leavers; (2) those who apply for cash welfare but are never enrolled because of non-financial eligibility requirements or diversion payments; and (3) those who appear eligible but are not enrolled in the state program. Administrative data will be used and telephone surveys of 15,000 households will be conducted over 5 years.
Georgia	Georgia State	4-year time limit, work requirement no later than 24 months after first receiving assistance, family cap, diversion payments of 1-5 months.	The project will build on an on-going study in Georgia by tracking two cohorts of welfare leavers. The first is a cohort of 2,000 leavers will be tracked in administrative records from January to October 1997. A second cohort will track 200 per month from July 1998 to June 2001 via a telephone survey.
Illinois	University of Illinois at Springfield and Chapin Hill	Families with children aged 13 or older have 24-month time limit (otherwise 60-month time limit), family cap, and transition childcare	The University of Illinois at Springfield will build upon an ongoing Closed Case Study using administrative data to track clients for an additional 6 months. A cohort of cases who leave assistance between January and March 1999 will be sampled, using full population administrative data and 800 survey interviews.

Exhibit 2.3 (Continued)
ASPE Welfare Leaver Evaluation

Evaluation	Evaluator	Program Design	Summary
Los Angeles County, California	Manpower Demonstration Research Corporation	Comparison of outcomes for Welfare Leavers across two counties in Ohio and California.	MDRC will supplement their Urban Change project to provide a special focus on leavers. The outcomes will be used for a two-site study that allows comparisons between this project and the Cuyahoga County, OH project while controlling for study design. Samples will be taken from cohorts of cases who leave assistance between January and March 1999. Up to ten years of full population administrative data will be used, and mixed-mode sample survey will be drawn from the cohort of cases who leave assistance.
Massachusetts	Chapin Hall and UMASS-Boston	24-month time limit, community service after 2 -months, family cap.	The evaluator will analyze two cohorts of welfare leavers. The first consists of a full population sample (approximately 20,000 cases) of leavers from January to June, 1997, while the second cohort consists population sample (approximately 15,000 cases) of families that exited welfare between December 1998 and February 1999. For the first cohort, data is collected through the MA Dept. Of Revenue's Longitudinal database and a sample survey. For the second cohort, administrative data and a detailed mixed mode survey of 600 cases will be linked to the longitudinal database.
Missouri	University of Missouri and Midwest Research Institute	48-month time limit, extended child care, diversion payments	The Midwest Research Institute will be linking data from state administrative data on health and human services programs, employment and training programs, wage records, and non-profit emergency assistance records to analyze outcomes for welfare leavers.
New York	Rockefeller Institute of Government is advising the project	Diversion payments, expanded earnings disregards, immediate work requirements.	The focus of this project is on several outcomes for welfare leavers including: the frequency of outcomes such as employment, job retention, use of transitional assistance and returns to assistance; identifying barriers to self-sufficiency; examining the effectiveness of sanction policies in changing behavior; and developing a longitudinal tracking capacity for welfare outcomes in New York City.
San Mateo, Santa Clara and Santa Cruz Counties, California	Sphere Institute and TBD	Comparison of outcomes for welfare leavers across three counties in California.	The SPHERE Institute plans to work with a consortium of three contiguous counties (San Mateo, Santa Cruz, and Santa Clara) to evaluate the impacts of welfare reform on policy relevant subgroups in these counties in 1996 and 1998. Administrative data will be used in an analysis of cohorts in 1996 and 1998. In addition, two thirty- minute mixed mode surveys will be conducted for the 1998 cohort.

Exhibit 2.3 (Continued)
ASPE Welfare Leaver Evaluation

Evaluation	Evaluator	Program Design	Summary
South Carolina	Under negotiation	24 month time limits out of 120 months, subsidized employment, no transitional Medicaid longer than 12 months.	The evaluator will analyze individuals who have left welfare and stopped receiving benefits for four months. Two cohorts will of job losers will be used from 1997 and 1999. Outcomes of interest include changes in marital status, employment, and earnings.
Washington	None yet	Transition child care if income does not exceed 175% of federal poverty level, $1500 diversion payment limit.	The focus of this project is on three populations: those who receive welfare; those who are diverted, and those who appear to be eligible but do not enroll. The sample for the analysis includes three cohorts: a pre-TANF cohort from the fourth quarter of calendar year 1996; an early implementation cohort from the fourth quarter of 1997; and a full implementation cohort from the fourth quarter of 1998. The second cohort includes a sample of continuing cases for comparison, while a mixed mode survey of 1,300 cases is planned for the third cohort. For all cohorts, linked administrative data will be used from TANF Food Stamps, Medicaid, Child support, Child Welfare, Unemployment Insurance and the State Basic Health plan for the 24 months around exit time.
Wisconsin	None yet	Diversion strategy, strict work requirements	This study will expand upon three existing projects. The first project will develop a longitudinal database from 1998 forward to study families who left AFDC prior to the implementation of Wisconsin Works (W-2) or who did not convert during the transition. The second project will include a survey (that is already in the field) for clients who leave W-2 in 1998. The final project will expand a planned study of people who apply for W-2 in Milwaukee between October 1998 and March 1999.

if one of the outcomes analyzed is SSI participation. Even if there is not a plan to follow transitions to SSI, the cost of such an analysis would significantly be decreased if linked longitudinal administrative databases with information on SSI and TANF participation were available.

There are also some individual welfare leavers projects in states that already have on-going welfare reform evaluations. These concurrent evaluations present an opportunity to obtain a more comprehensive depiction of transitions between welfare programs and SSI insofar as the evaluation efforts may be designed and interpreted to supplement each other's findings. The projects that overlap with the state welfare evaluations include Arizona, Florida, and Wisconsin. Florida could be a very useful evaluation because it is conducting a large scale survey effort of 15,000 households over 5 years for those who leave welfare, those who are diverted, and those who appear to be eligible but do not enroll. In addition, the Wisconsin welfare leavers project may provide more promise than the Wisconsin state welfare reform evaluation because it is expanding on work from three projects. The Wisconsin investigator is planning to build a longitudinal database from 1988 forward to study families who either left AFDC prior to the implementation of Wisconsin Works or who did not convert during the transition.

IV. MULTI-STATE/CITY EVALUATIONS

A. Overview

We identified three sets of welfare reform evaluations that are based on multi-state, county, or city programs that could be of use for SSA purposes.[28] First, there are several interesting descriptive studies that are collecting information across multiple states, cities and counties. These studies include:

- The Urban Institute's Assessing New Federalism Project;
- MDRC's Project on Devolution and Urban Change; and
- John Hopkins University Welfare Reform Three City Study.

A second set of studies that used an experimental design to evaluate the effects of various work and training approaches (without time limits) in different cities are also of interest. These include:

- MDRC's National Evaluation of Welfare-to Work Strategies;
- MDRC's California Greater Avenues for Independence (GAIN) Program Evaluation; and
- MDRC's Los Angeles Replication Study.

A final set of evaluations that are of interest include those with an experimental design to evaluate work strategies for the "hard-to-serve" welfare populations. These evaluations could provide some information on groups of interest, such as substance abusers, and contain individuals who have a higher probability than other AFDC recipients of transitioning into SSI as a result of work requirements. These include:

[28] A detailed summary of all nine projects reviewed in this section is provided in ***Appendix Exhibits A.12-A.20***.

- Mathematica's Welfare to Work Evaluation;
- California State University's Employment Readiness Demonstration Project; and
- MDRC's Wisconsin New Hope Project.

B. Suggestions

The Assessing New Federalism (ANF) Project is of particular interest for several reasons. First, The Urban Institute is constructing a State Welfare Rules database that will include a summary of rules from state programs from 1980 through the present. The goal of the database is to organize detailed information on welfare program rules across states, time, geographic areas within a state, and different groups of recipients within a state. This information could be very valuable in future quantitative analyses that require state specific information. In addition, this database also serves as an excellent reference to compare state welfare programs both in a cross-section and over time.

A second reason why ANF is of interest is because the investigators have created a state database that contains general administrative statistics on a wide variety of programs, including SSA programs. This database includes general demographic and economic characteristics, income security program information (e.g., AFDC, Food Stamps, SSI), social services (child welfare, education), health usage information (e.g., health insurance, health providers), child youth and well being characteristics (e.g., achievement and risk behavior measures), and "other" characteristics (e.g., employment and training, housing). This database is available on the web at *http://newfederalism.urban.org/nfdb/dataview/nfselect.cfm.*

The ANF project also includes a major database called the *National Survey of America's Families* (NSAF) that will be of future interest. The survey includes individual level information specifically regarding individual SSI application and recipiency. This database also includes several important dimensions of well-being that are not captured in other national surveys and provides representative samples of populations in thirteen states.[29] A summary of the measures gathered by NSAF is provided in ***Appendix Exhibit B.24***. SSA could use this survey to characterize well-being of SSI recipients. In addition, the NSAF could be used to compare SSI recipients across different states. One round of the survey has been completed and a second round of surveys will be conducted in 1999.

The other two descriptive studies reviewed (Project on Devolution and Urban Change, and the Welfare Reform Three City Study) have less potential value for SSA's purposes. The Urban Change project is collecting survey and administrative data on the effect of welfare reform in four major cities. While this project will include survey information on SSI participation, uses administrative data, and includes an ethnographic study, the samples used in the study may be too narrow for SSA's purposes. Similarly, the Welfare Reform Three City study also provides some information on SSI receipt, but the sample for the project is relatively small. This study did receive, however, special funding to analyze the well-being of persons with disabilities.

[29] The state representative samples include Alabama, California, Colorado, Florida, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Texas, Washington, and Wisconsin.

The evaluations that use an experimental design to evaluate the effects of various work and training approaches (without time limits) in different cities contain components that are of immediate and future interest to SSA. In all three evaluations (The National Evaluation of Welfare-to Work Strategies, California GAIN Program Evaluation, and Los Angeles Replication Study), survey information was gathered regarding individual income received from SSI, DI, or Aid for the Disabled. The surveys in the National Welfare-to-Work Strategies are of particular interest because of their large sample sizes. The investigators have already used survey data in their evaluations and found some evidence that people who left AFDC applied for SSI.[30] Each of the three projects also uses large administrative samples of TANF, Food Stamp, and UI recipients for their analysis that could be beneficial to a potential link to SSA records. The two California studies are also very promising for future analyses because both had access to administrative data that included SSI participation information. The Los Angeles Replication Study may, however, be more promising because the California GAIN program has ended.

Two of the studies that focus on the "hard to serve" could be of interest for SSA. The Employment Readiness Demonstration Project in California uses an experimental design to evaluate the effectiveness of alternative strategies in serving individuals with multiple employment barriers. Among other things, special assessments are being made for substance abuse testing. In addition, the administrative data used for the project includes SSI information from California MEDS files.

The second study of interest is the Welfare-to-Work Evaluation. In this evaluation, a plan is being developed using an experimental design to evaluate how local organizations assist hard-to-serve individuals. Administrative and survey data will be gathered on individuals at the experimental sites. The survey data will include information on SSI receipt. SSA may have an opportunity to provide some input to these surveys because they are not yet in the field. The final "hard-to-serve" project reviewed, the Wisconsin New Hope Project, may only have limited uses for SSA's purposes because of its limited sample for evaluation (four sites in Wisconsin).

V. IMMIGRANT WELFARE REFORM EVALUATIONS

A. Overview

We identified two evaluations, both conducted by The Urban Institute, that explore the impact of welfare reform on immigrant populations.[31] Both evaluations are descriptive in nature, focusing on the effect of the reforms on the income, employment, health, and program participation status of immigrants. The first study, "Immigrants in New York: Their Legal Status, Incomes, and Taxes," used descriptive data from various administrative sources and the Current Population Survey (CPS) to characterize the status of different groups of immigrants. The second study, "The Impact of Welfare Reform on Immigrants," used information gathered in a telephone survey to compare impacts of welfare reforms on immigrants living in New York City and Los Angeles.

[30] The results from a five year survey will be released in 2000.
[31] A detailed summary of these evaluations appears in ***Appendix Exhibits B.21 and B.22***.

B. Suggestions

The "Immigrants in New York: Their Legal Status, Incomes, and Taxes" study may be beneficial to SSA because this report developed a methodology to identify immigrant subpopulations using data from the CPS. Because some subpopulations of immigrants may be more adversely affected by welfare reforms than others, this methodology could be helpful in a descriptive analysis by SSA using the CPS. For example, trends in the usage of SSA programs by different immigrant subpopulations could be tracked using matched data from the CPS and SSA records.

The "Impact of Welfare Reform on Immigrants" study may also be of some interest to SSA by providing descriptive information on SSA program participation by immigrant populations in Los Angeles and New York. The evaluators are collecting data via a comprehensive telephone survey of 3,200 immigrant households that contain at least one past or present Food Stamp recipient in both Los Angeles and New York City. Their survey effort includes questions on SSI participation.

VI. SUMMARY OF SUGGESTIONS

A. Summary of Projects

In this section, we provide a summary of suggested welfare reform evaluations that would be of interest to SSA. We organize this summary around the three criteria (described in Section I) to select evaluations. These criteria include program design, project design, and focus on a specific demographic group (children, substance abusers, or immigrants). We also summarize any information on SSI participation that was gathered in each evaluation.

B. Summary of Projects of Current Interest to SSA

As shown in ***Exhibit 2.2***, most evaluations have gathered some information on SSI participation. While many studies were gathering this information, we found only two evaluations, Abt's Arizona EMPOWER Welfare Reform Evaluation and MDRC's National Evaluation of Welfare-to-Work Strategies, that have analyzed transitions from AFDC to SSI. The Arizona study includes a broader evaluation of work requirements and time limits, whereas the National Evaluation of Welfare-to-Work Strategies focuses specifically on work requirements.

Because most of the evaluations reviewed do not focus on transitions from AFDC to SSI, SSA will need to rely on future evaluations to obtain information for their purposes. Below we summarize the evaluations that could be of future interest to SSA.

C. Summary of Projects of Future Interest to SSA

We found the projects that have an experimental design and focus on policy changes involving work requirements and time limits are of most interest. These studies can provide the most definitive information on the effect of specific state reforms on SSI. Most of the state welfare reform evaluations reviewed include experimental evaluations of work requirements and time limits. Hence, these projects are likely to be of most interest to SSA in the future. Some of the state welfare evaluations and multi-state/city evaluations use an experimental design to evaluate the effects of various work requirements. These studies would be useful in the context of

answering more specific questions on the impacts of work requirements. Finally, while the descriptive studies reviewed could be of interest by providing broad based information on the implementation of welfare reform, these studies are more useful in the context of providing support for another future evaluation (e.g., an econometric model). Unlike the experimental design evaluations, the descriptive studies could not be used alone to provide information on the effects of various welfare reforms because they lack control or comparison groups.

We found that several state welfare evaluations could be of interest because of a combination of several factors that include an interesting program design (work requirements and/or time limits) and project design (experimental analyses), child impact analyses, linked administrative data sources, and survey questions regarding SSI participation. The evaluations we found to be of most interest were Arizona, Connecticut, Florida, Iowa Minnesota, Nebraska, and Vermont. The evaluations in Texas and Indiana could also be of interest if administrative data links between these states and SSA could be established.

Several welfare leaver projects could also be of interest because they are focusing on individuals making transitions from state welfare programs. While there is only limited information currently available on these projects, we found at least three projects, District of Columbia, New York, and Wisconsin, are creating a full population administrative data file that includes SSI information. The drawback of these projects in comparison to the state welfare reform evaluations is that there are no control and comparison groups.

We found that several of the multi-state/city welfare reform evaluations could provide important information that would satisfy multiple SSA needs. The Assessing the New Federalism Project could provide important broad based descriptive information to SSA. The California GAIN Evaluation and Los Angles Replication Study could be of use because both have access to administrative data on SSI participation and are part of an experimental design evaluating various work approaches. Time limits, however, are not part of the programs being evaluated in these two studies. Finally, the Employment Readiness Demonstration Project (in California) and the Welfare-to-Work Evaluation could provide important information on "hard-to-serve" individuals using an experimental design approach on the best strategies to serve this population. Again though, the focus of the evaluation in this project is only on work requirements.

In our review of immigrant evaluations, we found that two studies may provide descriptive information that could be informative for SSA's purposes. One study, "Immigrants in New York: Their Legal Status, Incomes, and Taxes," presented a methodology for identifying subgroups of immigrants in the CPS that can be applied to future analyses using matched CPS/SSA data. The other study, "Impact of Welfare Reform on Immigrants," is conducting a survey specifically on immigrants in Los Angeles and New York that includes questions on SSI participation.

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CHAPTER 3
STATE SITE VISITS

I. INTRODUCTION

In this chapter, we present the findings from site visits to five states: California, Connecticut, Florida, Michigan, and Wisconsin. The site visits had two objectives: first, to gather contextual evidence of the overall effect of welfare reform on SSA programs; and second, to identify resources for use in possible future evaluations of the effects of welfare reform on SSA programs. Because two other SSA projects have conducted site visits which focused on the effects of the SSA DA&A and child disability reforms, the primary focus of this set of site visits was to obtain further information about the likely effects of the non-SSA reforms, specifically reforms in AFDC/TANF. Our findings are based on information gathered from interviews with numerous state agency officials, advocates, and SSA field office staff, and, when available, information from state reports and independent evaluations.

In the remainder of this chapter, we further describe the purpose of the site visits within the context of this project. We also discuss the criteria used to select states for the site visits, and the attributes of the five states ultimately selected. We conclude the chapter with a summary of the findings from the visits. Full reports on the findings specific to each of the site visit states are contained in ***Appendix C***.

II. PURPOSE OF THE SITE VISITS

The primary objective of the site visits was to gain a better contextual understanding of the impact of the non-SSA welfare reforms on the SSA disability programs. The information gathered through the site visits was very useful in helping us to further understand how state and local policies and programs, as well as socioeconomic and cultural factors, have influenced the populations affected by PRWORA and BBA. Of particular interest to this study are policies and initiatives implemented by the following programs and organizations: state AFDC waiver and demonstration projects in effect prior to the passage of PRWORA; state TANF programs instituted after PRWORA; state and local General Assistance programs; state Medicaid programs; SSA field offices; state disability determination services; and local advocacy and service organizations. The information collected through the site visits regarding the perceived impact of state and local welfare reform initiatives was used to gauge the viability of specific research hypotheses, and to inform the development of quantitative analyses designed to estimate the impact of the non-SSA reforms on the DI and SSI disability programs.

A second objective of the site visits was to obtain detailed information on: on-going welfare evaluations of interest; the availability of state or local administrative or survey data; and the potential for linking the state data to SSA administrative data. Administrative databases of interest include: AFDC/TANF files, Medicaid files, Food Stamp files, public education files (especially special education), foster care and other child protective services files, Unemployment Insurance wage records, the Job Training and Partnership Act Standardized Program Information Reporting (SPIR) data, and others. The nature and availability of state-level data on populations affected by the legislation has implications for some of the potential

study designs for quantitatively assessing the impact of non-SSA welfare reforms on the SSA programs.

III. METHODS

A. Selection of States and Localities

We selected the five states we visited on the basis of the states' AFDC/TANF policies and potential opportunities in each state for quantitative analyses of the impact of welfare reform on the SSA programs. In making our selection, we considered the following factors: size of the welfare population; "interesting" state waiver provisions outside the basic federal requirements; program time limits; stringent work requirements; subsidized employment opportunities; evidence of past shifting of welfare recipients from state to federal rolls; and region of the country. Below, we describe the reasons for selecting each of the five states.

- **California** has the largest welfare population in the United States, including a disproportionate share of drug addicts and alcoholics and immigrants who are affected by the SSA-related reforms. In addition, California had ongoing waiver demonstration projects from 1992 until January 1998, when it implemented its TANF program entitled California Work Opportunities and Responsibility to Kids (CalWORKs). Finally, as evidenced by the number of recent and ongoing welfare evaluation and research efforts in California, the state and county welfare officials are supportive of welfare program research and the use of administrative databases in such research efforts.

- **Connecticut** implemented a reform program, Reach For Jobs First, in January 1996 as an amendment to an earlier program. There is a 21-month time limit on benefits and progressive full family sanctions for cases not complying with work, job search, or child support enforcement requirements. To comply fully with PRWORA, Connecticut made minor adjustments to Reach For Jobs First and renamed the program Jobs First, in July 1997. The Connecticut Department of Social Services is currently evaluating the program using a random assignment experimental design.

- **Florida** has historically been one of the leading states in the nation in welfare experimentation. In 1994, it obtained federal welfare reform waivers to implement its Family Transition Program in two counties. The Family Transition Program was one of the first in the country to combine a 'Work First' approach with time limited benefits. Florida has adopted much of the Family Transition Program's philosophy into its TANF program, Work and Gain Economic Self-Sufficiency (WAGES), which the State implemented in October 1996. The State of Florida also maintains detailed historical data on its AFDC/TANF program and a rich database on employment and program participation outcomes for persons exiting Florida high schools as well as other state programs and institutions.

- **Michigan** has a long history of waiver demonstration projects dating back to 1992. Michigan has immediate work requirements and community service after two months, but its program time limits are the same as the federal requirements. In addition, Michigan had experience with shifting General Assistance (GA) recipients onto SSI, and a study has been conducted on this change using linked State GA and SSA disability program data. Finally,

Michigan had a large population of child and DA&A cases that were affected by the recent reforms. Michigan implemented its TANF program, the Family Independence Program (FIP), in October 1996.

- **Wisconsin** has a particularly rich history of welfare reform. Wisconsin's welfare reform efforts pre-date the passage of PRWORA, and the state has seen dramatic reductions in its welfare caseload over the past ten years. In addition, Wisconsin is the site of several interesting evaluation and data collection efforts. Wisconsin's welfare programs operated under a variety of welfare reform waivers after PRWORA until it implemented Wisconsin Works (W-2) in September 1997.

Within each state, we used a few basic criteria for selecting local areas to visit. We gave first priority to visiting state capitals to facilitate interviews with state welfare officials. We also generally visited the metropolitan areas within the states having the largest number or highest concentration of potentially affected populations. In addition, we tried to select local areas that had on-going welfare evaluations and that had particularly interesting data on welfare recipients. Finally, because each site visit was limited to three days, we worked to ensure that travel among localities and within localities did not consume excessive time.

B. Sources of Information

In each state, we interviewed representatives from federal, state, and local government agencies as well as advocates and private service providers. We gave top priority to meeting with representatives from state welfare agencies, state Disability Determination Services (DDS), and SSA District/Field Offices. These "first tier" interviews included discussions of: the nature of recent non-SSA welfare policies and efforts; the potential impacts of these policies on the state welfare agency, clients, and the SSA programs; the agency's ability to meet the needs of clients with disabilities; the quality and quantity of services provided; issues surrounding funding and budgetary constraints; client ability and willingness to participate in provided services; and any other observations relevant to the impact of specific policies on the SSA programs. We also discussed the availability of data on welfare clients and the feasibility of linking those data to SSA administrative files.

We also conducted interviews with representatives from local public or private agencies that provide direct services to clients or act as advocates for groups affected by the recent legislation. These included agency directors and direct service providers from organizations such as the state Medicaid office, community mental health centers, agencies serving the homeless, medical care providers, advocacy groups, and others identified in interviews with lead agency staff. As with the state welfare agencies, the content of the interviews consisted of discussion regarding recent changes in policy and any new efforts that would affect the propensity of clients to seek DI or SSI, impacts of these policies on the agency and on clients, the agency's ability to meet the needs of clients with disabilities, the quality and quantity of services provided, issues surrounding funding and budgetary constraints, client ability and willingness to participate in provided services, and any other observations relevant to the impact of specific policies on the SSA programs.

IV. SUMMARY OF THE FINDINGS

A. Effect of State Welfare Reforms on SSA Programs and People with Disabilities

The effects of state reforms on SSA programs and people with disabilities identified in the five states we visited can be categorized as follows: effects on transitions to SSI; effects on the employment services available to people with disabilities; effects on the welfare safety net for persons with disabilities; and effects on the administration of the SSA programs. We describe our findings under each of these topics below.

1. Transitions to SSI

In only one of the states we visited was there the perception that the recent welfare reforms had caused increased transitions to SSI. In Connecticut, interviewees indicated that the recent reforms (time limits and strict work requirements) may have resulted in a small increase in transitions to SSI, but that such an increase may be difficult to perceive empirically because of the myriad of other recent SSA and non-SSA program changes affecting SSI participation in the state. Interviewees in the other four states acknowledged the now increased incentive for recipients with disabilities to apply for SSI given the stricter work requirements of their TANF programs, and increased incentives for states to help them obtain SSI, but there is no perception of an actual migration to SSI following the most recent reforms. There are several reasons for this. First, most of the states we visited have been identifying and actively referring potential SSI-eligible welfare recipients to SSI since the early 1990s. Interviewees in California, Michigan and Connecticut all described large-scale past efforts to identify persons with disabilities participating in state welfare programs and refer them to SSI. Although, in some states, it could be that most of these potentially eligible persons on the AFDC/TANF rolls have already been shifted to SSI. In Florida, interviewees also indicated that the historically low AFDC benefit would have already induced individuals seeking income support to apply for SSI. Second, the time limits for benefit receipt had not yet elapsed for any recipients in the TANF programs. Interviewees in California, Connecticut, and Florida indicated that substantial increases in transitions to SSI, if they are to be observed at all, will probably not occur for 1 to 2 years in Florida and Connecticut, and 3 to 4 years in California.

Interviewees in Wisconsin cited different reasons for the perceived absence of induced transitions to SSI. One is that the recently implemented W-2 program, to date, has not begun to focus on the hard-to-serve recipients in their program. One of the contractors administering the W-2 program in Milwaukee indicated that they will be focusing more on persons with disabilities participating in W-2 in the coming months and that one of their strategies may well be to refer them to and assist them in applying for SSI. SSA field office staff indicated that they have planned to conduct training sessions in the future with W-2 staff on SSI eligibility to help them more effectively identify and assist persons who may be eligible. A second explanation, expressed by several advocates in Wisconsin, is that many of the individuals who could apply for SSI are slipping through the cracks for two reasons: 1) the new W-2 administrators do not have adequate knowledge of or experience with the SSI program to effectively refer potentially eligible W-2 participants; and 2) the state's policy to divert individuals from the TANF program

also extends to the other federal programs (including SSI, Food Stamps, and Medicaid) because the state does not want former AFDC recipients appearing in any other program statistics, as this would refute the appearance that the state has successfully put the vast majority of its former welfare recipients to work.

We asked many knowledgeable people about the possible effects of Food Stamp and Medicaid reforms on SSI. None perceived or expected a significant effect of these reforms on the SSI program.

2. Employment Services Available to Persons with Disabilities

In most of the states we visited, interviewees indicated that the recent TANF reforms have resulted in increased employment services and other resources available to persons with disabilities, and that these new efforts could dampen excess flows to SSI in response to TANF. In California, the CalWORKs program provides special services to recipients with substance abuse and mental or emotional impairments, and the Employment Readiness Demonstration focuses on the hard-to-serve, including people with disabilities, assisting them in finding and maintaining employment. In Connecticut, persons with disabilities are encouraged to address barriers to employment in their Employability Plans. The state then provides training and rehabilitation services designed to assist persons with disabilities return to work. In Florida, the Florida Developmental Disabilities Council has received funding through a US Department of Labor Welfare-to-Work grant to assist long-term welfare recipients with learning and other disabilities in finding and retaining jobs. In Michigan, TANF recipients who apply for SSI and are subsequently denied are referred to specialized training programs that tailor services based on the information gathered during the SSI disability determination process. Finally, in Wisconsin, the W-2 administrator described a supported employment program they offer to serve W-2 participants with disabilities. As discussed above, however, this administrator indicated that they had not yet begun to fully focus on the hard-to-serve in Wisconsin.

3. Welfare Safety Net for People with Disabilities

Interviewees in three of the states we visited indicated that the AFDC/TANF reforms have, in some ways, disrupted social supports for people with disabilities. As discussed above, advocates in Wisconsin believed that the lack of knowledge on the part of new TANF program staff has resulted in persons with disabilities not obtaining the welfare services for which they are eligible and badly need. A similar view was expressed by a few interviewees in Michigan who indicated that the TANF program is being poorly implemented due to the inexperience of new staff and high staff turnover rates, but the impact of this on people with disabilities was believed to be rather small.

Interviewees in two states expressed concern about the effect of welfare reform on persons with non-severe disabilities. In Florida, interviewees indicated that the WAGES program was not set up to adequately address the needs of those with non-severe disabilities and expressed some concern about what would happen to these individuals when their time limits had elapsed. In Wisconsin, advocates alleged that persons with non-severe disabilities have the perception that the W-2 program is only for able-bodied individuals who have the capacity to work. These

individuals, who are not eligible for SSI, are not applying to participate in the W-2 program because of this perception, and therefore no longer have any major source of public support.

As discussed above, advocates in Wisconsin also believed that the state's welfare diversion policy extended to SSI, Food Stamps, and Medicaid. They indicated that this, along with the lack of knowledge about welfare resources among W-2 staff and confusion about where to go for services on the part of welfare clients, has caused a large increase in the demand for the local services that their organizations provide (emergency assistance, food pantries, homeless shelters).

4. SSA Program Administration

In Wisconsin, interviews with SSA field office staff identified implications of welfare reform, other than caseload effects, for the SSA programs. State reforms in Wisconsin have had several impacts on the administration of SSA programs at the local level. These include the following:

- The structure and level of payment under the new W-2 program rendered W-2 participants applying for SSI ineligible. W-2 participants in the W-2 Transitions category of the program (the category where persons with disabilities or other impediments to employment are placed) receive a fixed stipend of $628 per month. The manner in which this stipend is counted for purposes of SSI eligibility rendered SSI applicants participating in W-2 ineligible for SSI. Once the issue was identified, the state instituted a "state-only" payment status category for W-2 participants applying for SSI (state-only funds are excluded from SSI income eligibility calculations). There has been some difficulty, however, in identifying SSI applicants in W-2 and instituting the state-only payment status. Delays in obtaining the state-only status has had negative repercussions for SSI applicants who become eligible for SSI in establishing date of eligibility, and receiving retroactive payments.

- As part of Wisconsin's welfare reform, changes in the manner in which child support payments are made to TANF recipients were instituted. Under the current system, child support payments are passed through to TANF recipients and their TANF payment is unaffected by the child support payment. Child support payments only affect whether or not the family would meet income eligibility requirements for participation in TANF, not the fixed W-2 payment received. This has had an effect on the way the local SSA field offices administer SSI benefits because the monthly incomes of SSI/TANF families receiving child support may be much more volatile, resulting in the need for SSA to track child support payments and correct over- and under-payments for SSI more frequently than before welfare reform. The local field offices do not currently have data linkages established with the state's child support enforcement agencies, but are initiating discussion with the state to establish such links in the future. In the absence of a data linkage, the burden of providing evidence of child support payments, or lack thereof, now falls on the SSI recipient.

- A final change in Wisconsin's welfare programs relates to the state's SSI supplement. Wisconsin now utilizes a private contractor, not SSA, to administer the state supplement. One effect of this has been increased confusion on the part of SSI recipients. Now, field office staff must refer recipients to a different entity for issues related to the state supplement.

We did not identify any perceived effects of non-SSA welfare reforms on the administration of the SSA programs in any of the four other states we visited.

B. Effect of SSA Reforms

1. DA&A Reforms

Of the states we visited, only interviewees in California and Michigan indicated large effects of the DA&A reforms in their states. Both of these states have very large populations of persons with DA&A impairments, ranking first and second in the nation, respectively. Of California's approximately 44,000 DA&A recipients who were to have their benefits terminated on December 31, 1996, approximately one-third successfully appealed their terminations and were able to retain their eligibility for SSI and/or DI. California counties have had to absorb many of the approximately 30,000 remaining persons into their General Relief programs. This shift has had a substantial budgetary impact on county governments, as the counties are required by state law to pay cash benefits and provide medical assistance to all indigent populations not covered by other programs. Michigan had approximately 15,000 DA&A cases receiving termination notices, and of these, 38 percent requalified for benefits on the basis of a different disability. Staff in Michigan also indicated that the DA&A reforms were difficult to implement because of the multiple changes in policies. They indicated that implementation of the new policy probably varied considerably across field offices.[32]

2. Childhood Disability Reforms

Interviewees in three states, Connecticut, Florida, and Michigan, indicated that the SSA childhood disability reforms had a significant effect in their states. In Connecticut and Michigan, SSA field office staff indicated that the childhood disability provisions had a large effect on their workloads and required resources to be shifted away from other activities (such as Continuing Disability Reviews, CDRs) to accommodate the processing and re-processing of childhood disability claims. Interviewees in Florida commented that the childhood reforms, coupled with the non-citizen reforms, created an "administrative fiasco," the effects of which are still being experienced by Florida SSA field offices and the state DDS.[33]

3. Non-Citizen Reforms

Notable effects of the SSA reforms related to non-citizens were perceived in California and Florida. In California, both the State and county governments were expecting to absorb the cost of nearly 190,000 non-citizens whose SSI eligibility was eliminated under PRWORA. Although

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[32] For additional information on DA&A reforms, see The Lewin Group (1998). *Policy Evaluation of the Effect of Legislation Prohibiting the Payment of Disability Benefits to Individuals Whose disability is Based on Drug Addiction and Alcoholism: Interim Report.* Report prepared for the Social Security Administration, July 21, 1998.

[33] For additional information on childhood disability reforms, see RAND (1998). *Background and Study Design Report for Policy Evaluation of the Effect of the 1996 Welfare Reform Legislation on SSI Benefits for Disabled Children.* Report prepared for the Social Security Administration, April 1998.

the Balanced Budget Act of 1997 restored SSI eligibility to most of these non-citizens, the threat of their termination produced significant political debate at both the state and county level as well as administrative turmoil within the State and county social services agencies, and at SSA District Offices. In addition, the State developed the Cash Assistance Program for Immigrants (CAPI), a state-only, SSI look-alike program for non-citizens with disabilities. In Florida, Dade County experienced a disproportionately large impact as a result of the reforms affecting non-citizens. In addition to the SSA offices already existing in Dade County, SSA established three temporary offices to review the cases of the more than 60,000 Dade County residents who were aged and disabled non-citizens receiving SSI and at risk of losing their SSI eligibility.

C. State Welfare Evaluation Efforts

We identified a variety of completed and ongoing welfare evaluation efforts in the five states we visited.[34] The majority of the evaluation efforts included the use of state welfare program administrative data. In several instances, these data have been matched to administrative data from other programs such as Food Stamps recipiency data and Unemployment Insurance earnings data. Some evaluation efforts, including the Family Transition Program in Florida, the California Employment Readiness Demonstration Project, the Connecticut Jobs First evaluation, and the Wisconsin evaluation of W-2 work incentives, also utilize an experimental design. Other evaluations, like those being conducted by Florida State University of Florida's WAGES program and by the Family Independence Agency in Michigan, rely primarily on surveys of current and former program participants, including those who have been sanctioned or had their benefits terminated due to non-compliance with work requirements. An evaluation being conducted in Wisconsin will examine one-year outcomes for W-2 applicants and participants through surveys administered both at first program contact and one-year following first contact. Nearly all of the evaluations identified contain a component in which the evaluators assess program participant outcomes in areas such as employment status, income security, participation in other programs, and health. An evaluation by Michigan's Family Independence Agency, however, is the only evaluation we identified in the five states to have specifically addressed transitions from AFDC/TANF to SSI.[35] Studying the outcomes of approximately 100 families whose TANF cases were closed due to non-compliance with work requirements, the Family Independence Agency discovered that approximately 7 percent of these families went on to participate in SSI.

While only one of the evaluations identified specifically analyzed transitions from AFDC/TANF to SSI, the methodologies and findings of most of the studies could serve to inform a future evaluation by SSA of the effects of welfare reform on its programs. Some evaluations, especially those being conducted in California, have the potential to be used by SSA as stepping off points for its own evaluation efforts, perhaps by negotiating for add-on work in some cases. One evaluation, California's Employment Readiness Demonstration Project, is likely to be of particular interest to SSA. This evaluation, being conducted by a research team from the California State University–Bakersfield, is assessing the outcomes of participants in the

[34] Chapter 2 of this report contains further information on the welfare evaluations in the site visit and other states.

[35] Although information on enrollment in SSI will be included in the evaluation of one-year outcomes under W-2, this information has not yet been published.

Employment Readiness Demonstration Project, an eight-county project providing intensive employment and support services to over 1,500 "hard to serve" TANF recipients, including people with disabilities.

A list of the primary contacts for the evaluations identified in each state is presented in ***Exhibit 3.1*** at the end of this chapter.

D. State Data Sources

The States of California, Connecticut, Florida, and Wisconsin all have existing welfare and/or Medicaid databases that could be matched to SSA data and used to evaluate transitions from AFDC/TANF to SSI. Michigan is currently developing a longitudinal database that would facilitate similar evaluation activities. In addition, Los Angeles County recently constructed a longitudinal database to track TANF participants in the County. Although these data systems are generally rich in detail, some do not provide very good longitudinal histories of program participation.

The California and Florida data systems currently provide the best longitudinal histories. California's Medi-Cal Eligibility Data System (MEDS) Longitudinal Database provides program participation information on 10 percent of the State's Medi-Cal population back to 1987. Similarly, Florida's Department of Children and Families data system provides longitudinal AFDC/TANF eligibility histories back to 1993. All of the state officials with whom we spoke stated that they would be willing, within the parameters of federal law and regulation, to share the state's administrative data with SSA as long as the SSA studies would yield information of interest to the state. They were also willing to work with SSA to overcome data confidentiality issues and believed that most confidentiality issues could be resolved.[36] State officials did not foresee any substantial legal or technical obstacles to the sharing of administrative data with SSA.

A list of the primary contacts for the administrative data sources identified in each state is presented in ***Exhibit 3.2*** at the end of this chapter.

[36] One exception is with respect to access to Los Angeles County CalWORKs data. State law prohibits outside access to data on General Relief recipients. Los Angeles County officials with whom we spoke indicated that county employees, acting under subcontract to SSA, could perform analyses of GR data matched to SSA data.

Exhibit 3.1
Welfare Evaluation Contacts in the Site Visit States

EVALUATION	CONTACT
California	
CalWORKs Evaluation	Werner Schink Chief, Research and Evaluation Branch, Program and Planning and Performance Division California Department of Social Services 744 P Street Sacramento, CA 95814 916-654-1327 Jacob Klerman RAND 1700 Main Street P.O. Box 2138 Santa Monica, California 90407-2138 310-393-0411
Employment Readiness Demonstration Project	Werner Schink Chief, Research and Evaluation Branch, Program and Planning and Performance Division California Department of Social Services 744 P Street Sacramento, CA 95814 916-654-1327
Los Angeles County CalWORKs	Manuel Moreno, Ph.D. Urban Research Division Chief Administrative Office, Los Angeles County 754 Kenneth Hahn Hall of Administration 500 West Temple Avenue Los Angeles, CA 90012 213-974-4267
Connecticut	
Jobs First Evaluation	Dan Bloom Manpower Demonstration Research Corporation 19th Floor 16 East 34 Street New York, NY 10016-4326 212-532-3200
Florida	
Florida Transition Program (FTP)	Barbara Goldman and Dan Bloom Manpower Demonstration Research Corporation 16 East 34th St., 19th Floor New York, NY 10016-4326 212-532-3200
Work and Gain Economic Self-Sufficiency (WAGES)	Robert Crew, Ph.D., Associate Dean College of Social Sciences Florida State University P.O. Box 2160 Tallahassee, FL 32306-2160 850-644-6284

Exhibit 3.1 (continued)
Welfare Evaluation Contacts in the Site Visit States

EVALUATION	CONTACT
Michigan	
To Strengthen Michigan's Families Evaluation	Alan Werner Abt Associates, Inc. 55 Wheeler Street Cambridge, MA, 02138-1168 617-492-7100
Family Independence Agency Non-Compliance Evaluation	Charles Overbey Family Independence Agency 235 South Grand Avenue Suite 1305 Grand Tower Lansing, MI 48909 517 373-6830
Wisconsin	
Institute for Research on Poverty Evaluations	Tom Kaplan, Senior Scientist Institute for Research on Poverty University of Wisconsin - Madison 1180 Observatory Drive Madison, WI 53706 608-262-0345
New Hope Evaluation	Robert C. Granger Manpower Demonstration Research Corporation 19th Floor 16 East 34th Street New York, NY 10016-4326 212-340-8656

Exhibit 3.2
State Administrative Data Contacts

DATA RESOURCE	CONTACT
California	
MediCal Eligibility Data System	Werner Schink Chief, Research and Evaluation Branch, Program and Planning and Performance Division California Department of Social Services 744 P Street Sacramento, CA 95814 916-654-1327
UC Data Welfare Research Archive	Henry E. Brady, Ph.D. Professor of Political Science and Public Policy Director, UC Data Archive & Technical Assistance University of California - Berkeley Department of Political Science 210 Barrows # 1950 Berkeley, CA 94720-1950 510-642-3008
LA County CalWORKS Longitudinal Database	Manuel Moreno, Ph.D. Urban Research Division Chief Administrative Office, Los Angeles County 754 Kenneth Hahn Hall of Administration 500 West Temple Avenue Los Angeles, CA 90012 213-974-4267
Connecticut	
Connecticut Department of Social Services Administrative Data	Kevin Loveland Family Services Director Department of Social Services 25 Sigourney Street Hartford, CT 06106-2055 860-424-5031
Florida	
Florida Department of Children and Families Administrative Data	Don Winstead Welfare Reform Director Department of Children and Families 1317 Winewood Blvd., Bldg. 3 Room 406G Tallahassee, FL 32399-0700 850-921-5567
Florida Education and Training Placement Information Program (FETPIP)	Jay Pfeiffer. Director Workforce Education & Outcomes Info Service Florida Department of Education Florida Education Center, Turlington Bldg, Rm 844 325 West Gaines St. Tallahassee, FL 32399-0400 850-487-0900

Exhibit 3.2 (continued)
State Administrative Data Contacts

DATA RESOURCE	CONTACT
Michigan	
Family Independence Agency Administrative Data	Charles Overbey Family Independence Agency 235 South Grand Avenue Suite 1305 Grand Tower Lansing, MI 48909 517 373-6830
Wisconsin	
Wisconsin Department of Workforce Development Administrative Data	Sue Larsen Bureau of Welfare Initiatives Economic Support Division Department of Workforce Development 1 West Wilson Street P.O. Box 7935 Madison, WI 53707-7935 608-266-3288

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CHAPTER 4
STATE-LEVEL ANALYSIS OF PRE-REFORM ADULT SSI APPLICATION TRENDS

I. INTRODUCTION

A. Purpose

In this chapter we analyze state-level adult SSI disability application trends from 1988 to 1997. We focus on state-level trends and variation across states, because TANF reforms are state-level reforms and will likely have different effects on SSI by state.

The analysis serves five general purposes:

- To provide information on what state-level trends in applications were in the years prior to the reforms of interest;
- To assess whether, and how best to implement a pooled time-series approach to the evaluation of the impacts of reforms on SSA programs;
- To provide information that is useful in assessing the impacts of early AFDC reforms on SSI applications;
- To provide information about the impacts of other factors that may be confounded with the impacts of AFDC/TANF reforms, such as the economy and cuts in general assistance programs; and[37]
- To provide contextual information that is helpful in interpreting the analysis of matched SIPP/SSA data that is presented in the next two chapters.

We pay considerable attention to the effects of state general assistance (GA) program reductions during the period because the challenge of evaluating the effects of cuts in these programs is analogous to the challenge of evaluating TANF welfare reforms. GA programs are state-specific, they vary considerably in their nature. The nature of the reforms also varies considerably, as do the timing of the reforms. Reforms in some states are so extreme that it is relatively easy to see an effect on SSI applications, and reforms in other states are so modest that the impact on SSI applications, if any, is not obvious. The analysis of the GA reforms provides important lessons for the future evaluation of TANF reforms.

[37] We could have pursued a parallel analysis of allowances, but elected not to do so. Our earlier experience suggested that analysis of allowances using pooled time-series methods was more problematic than analysis of applications, and we also expected that if any effects of early reforms could be detected, effects on applications would be more evident than effects on allowances.

B. Application Data

We examine annual state application data from 1988 to 1997, by sex or by age (ages 18–29, 30–39, and 40–64). Ideally, we would examine data that are cross-classified by sex and age, because the applicant group most likely to be affected by the non-SSA reforms is young women, but such data are not readily available.

The data were obtained from two sources. For the period from 1991 through 1997, SSA staff prepared special state-level tabulations from a 10% sample of the Supplemental Security Record (10% SSR).[38] The data for 1988 through 1990 come from a public use file that The Lewin Group prepared under an earlier project (Lewin, 1995b). These were initially prepared by staff at the Office of Disability from a research file that contained information on 100 percent of applications over the period from 1988 to 1992. Comparison of the latter tabulations to the 10% SSR data in the two years, for which we have both series, 1991 and 1992, showed that discrepancies were small.[39] The trend graphs in this chapter all show a vertical line between 1990 and 1991 to indicate the break in the source for the series. "Application rates" are defined as applications per 10,000 population in the relevant category. We used Bureau of the Census national and state population estimates to construct these rates.[40]

C. Overview

We begin with a simple review of national application trends by sex and age from 1988 through 1997 (***Section II***), based on the annual data. The period through 1996 can be viewed as the pre-reform "baseline" period. The section includes: a first-cut assessment of the effects of the aging of the baby boom generation on applications, by sex; a comparison of application rate trends, by sex and age, to trends in the unemployment rate and the AFDC/TANF caseload; and a review of plausible explanations of these trends. We then examine trends in selected states (***Section III***). We focus on states with noteworthy early reforms, and compare their trends to national trends and to trends in states in the same region. Next we present estimates from pooled time-series analysis of the state trends over this period (***Section IV***). We conclude with a summary of the main findings and a discussion of implications for the future evaluation of the impact of welfare reforms (***Section V***).

II. NATIONAL SSI APPLICATION TRENDS

The period from 1988 through 1996 can be viewed as a baseline period for all of the welfare reforms that were implemented as a result of the passage of the Personal Responsibility Work Opportunities and Reconciliation Act (PRWORA) in August 1996, and other welfare reform legislation that passed in 1996 and 1997 (see Lewin, 1998a**)**. Evaluators of the impacts of welfare reforms are likely to compare post-1996 application experience with baseline experience as a crude assessment of the impact of welfare reform. More sophisticated efforts may use

[38] These tabulations match regional tabulations that appear in the SSI Annual Statistical Report for 1997, available on SSA's website. We thank Charles Scott and Clark Pickett for preparing these data.

[39] See ***Appendix Exhibit D.18.***

[40] These are available from the Bureau of the Census website in State Population Estimates.

analyses of the experience in this period to model counterfactual applications in the post-reform period – what applications would have been in the absence of the reforms.

The usefulness and validity of using this period in the manner described depends very much on what happened during this period. Is it reasonable to believe that the application experience in this period would have been replicated after 1996 in the absence of the reforms? If not, can we use the information from the 1988-1997 period to predict what that experience would have been, with a reasonable degree of confidence? Experience in this period may also be used to assess whether early (pre-PRWORA) welfare reforms already have had impacts on SSI applications.

In this section, we present our current understanding of the major features and causes of SSI application growth during the 1988-1997 period. This understanding is in part based on analyses of the period before 1993 that we have performed previously (Lewin, 1995a and 1995b).

In 1988, 59 adult SSI disability applications were filed for every 10,000 "working-age" adults – those between the ages of 18 and 64 (***Exhibit 4.1***). The application rate grew rapidly in the next five years, peaking at 99 per 10,000 in 1993, a 68 percent increase from 1988. It dropped almost as rapidly in the next four years. By 1997, the application rate had declined to 69 per 10,000, and showed no signs of leveling off.

Exhibit 4.1
Estimated Adult SSI Disability Applications per 10,000 Population and Age-Adjusted Applications per 10,000 Population, 1988 – 1997

Source: SSI applications were tabulated by SSA staff, and population data are from the Bureau of the Census. The vertical line between 1990 and 1991 represents a break in the source of the application tabulations. See the text for further details. Data are in ***Appendix Exhibit D.17***.

One force behind growth in the application rate was a gradual upward shift in the age distribution of working-age adults, as the baby boom aged. Those in the largest baby boom cohort were approximately 30 years old at the beginning of this period and almost 40 at the end. The effect of this factor on growth during this period was not very large, and clearly was not the cause of the rapid growth in the early part of this period. This can be seen by comparing the actual application rate series to a series that has been adjusted for changes in the age distribution of the population (***Exhibit 4.1***). The latter is a weighted average of age-specific application rates, with weights equal to the share of the working-age population in the age group in 1990.[41] Comparing the growth in the two series indicates that the contribution of this factor to growth from 1988 to 1997 was just under two applications per 10,000 population. The effect may be somewhat larger than that because the age categories used to construct the age-adjusted series were very broad, and the adjusted series do not control for the effects of changes in the within-category age distributions.

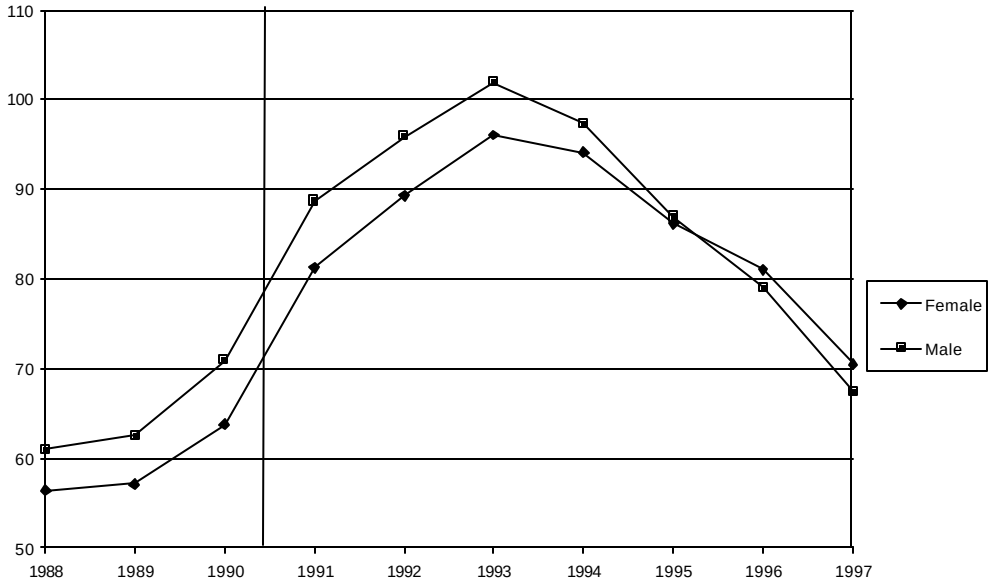
At the beginning of the period, the application rate for women was somewhat below that for men (56.4 vs. 61.0), but by the end of the period the female rate was higher (70.5 vs. 67.5) (***Exhibit 4.2***). One interesting question is whether this shift is due, in part, to non-SSA welfare reforms that occurred during this period, at least in some states. It might also reflect a "shift" of women from AFDC to SSI that is caused by factors other than the non-SSA welfare reforms. There are several other possibilities, including:

- aging of the baby boom generation and historically steeper age-application profiles for women than men;
- economic recovery; and
- a decline in the influence of general assistance reforms, which affected male applications more than female applications.

We consider the first of these below, and return to the others later in this section.

[41] Data for three age groups were used to construct this series: 18-29, 30–39, and 40–64. SSI applications were tabulated by SSA staff, and population data are from the Bureau of the Census.

Exhibit 4.2
Estimated Adult SSI Disability Applications per 10,000 Population by Sex, 1988 – 1997



Source: SSI applications were tabulated by SSA staff, and population data are from the Bureau of the Census. The vertical line between 1990 and 1991 represents a break in the source of the application tabulations. See the text for further details. The data appear in ***Appendix Exhibit D.16***.

The aging of the baby boom cohort provides a partial explanation of the growth in applications from women relative to those from men. Data from 1998 show that young men had higher application rates than young women, but older men had lower application rates than older women. If these age-sex specific rates were constant over time, the overall rate for women would rise relative to that for men as the at-risk population ages, just as we observe.

While we have not examined earlier periods, we conjecture that application rates for women have always increased with age relative to those for men. This would be consistent with historical sex role differences in society at large, the prevalence of female-headed households with children in the low-income population, and a welfare system that provides support for those households. Men are more likely than women to work when they are young and are therefore more likely to be eligible for DI benefits, and not SSI, after later onset of disability. Also, as Daly (1998) has shown, and the analysis in the next chapter demonstrates further, many adult AFDC women do transition into SSI. This may be partly because their children are aging out of AFDC. Hence, we would expect the aging of the baby boom cohort to not only contribute to the relative growth in applications from women, but to also result in some shifting of the adult welfare population from AFDC to SSI.

To assess the extent to which the aging of the baby boom alone contributes to the relative growth in applications from women, we have constructed application rates for men and women that have been adjusted for age. This controls for the effect of the aging of the baby boom, making it easier to assess the effects of other factors. The series we will examine have also been normalized, by sex, to a value of 1.0 per 10,000 in 1988; i.e., we have divided each year's application rate in a series by the 1988 value for the series to obtain the age-adjusted application rate in the year relative to the 1988 figure. Thus, for instance, a value of 1.35 in 1992 indicates

that the estimated application rate for the relevant sex group was 35 percent higher in 1992 than in 1988 after adjusting for change in the age distribution for the group.[42] Normalization of the series facilitates comparisons of changes across the two sex groups. We also present indices for application rates by age. These are simply age-specific application rates that have been normalized to be 1.0 in 1988.

All five of the indices (age-adjusted series for men and women and three age-specific series) are presented along with two other normalized series in ***Exhibit 4.3***. The first of these is the national unemployment rate divided by the 1988 value, and the second is for the AFDC/TANF caseload (i.e., number of families) per working-age adult. Like the application series, the latter series has been adjusted for the aging of the baby boom, and normalized to be 1.0 in 1988.[43]

The national age-adjusted application indices for men and women grew at essentially the same rate from 1988 through 1992 (top figure in ***Exhibit 4.3***), so in at least a proximate sense, the aging of the baby boom explains the relative growth of the female application rate during that period. From 1993 on, however, there is a clear divergence, with the female index first increasing more rapidly than the male rate, then declining more slowly. By 1997, the male index had declined to 1.08 (i.e., just eight percent above the 1988 value), while the female index had only declined to 1.19. While some of the divergence in the indices after 1992 might disappear were we able to use more narrowly defined age groups in making the age adjustments, it seems likely that this divergence reflects the effects of other factors, possibly including AFDC/TANF reforms or factors that may have shifted adult AFDC/TANF recipients to SSI.

A second important feature of application rate trends in this period is that rates for younger age groups increased substantially relative to those for older age groups, especially after 1991 (bottom figure in ***Exhibit 4.3***). Although application rates increase with age throughout the period,[44] the application rate for the middle age group (30–39) rose most rapidly, with its index reaching 2.09 in 1993. By comparison, the index value for the youngest age group (18–29) was 1.65 in 1993, and the index value for the oldest age group (40–64) was 1.68. The age-specific rates converged somewhat as they declined. In 1997, however, the rates for the two younger age groups were still much higher than their 1988 values (1.41 for the middle group and 1.30 for the youngest group), while the rate for the oldest age group was not (1.11). As with the relative changes in application rates for men and women, these changes might reflect AFDC/TANF reforms, or might be due to other factors that would shift adult AFDC/TANF recipients onto SSI.

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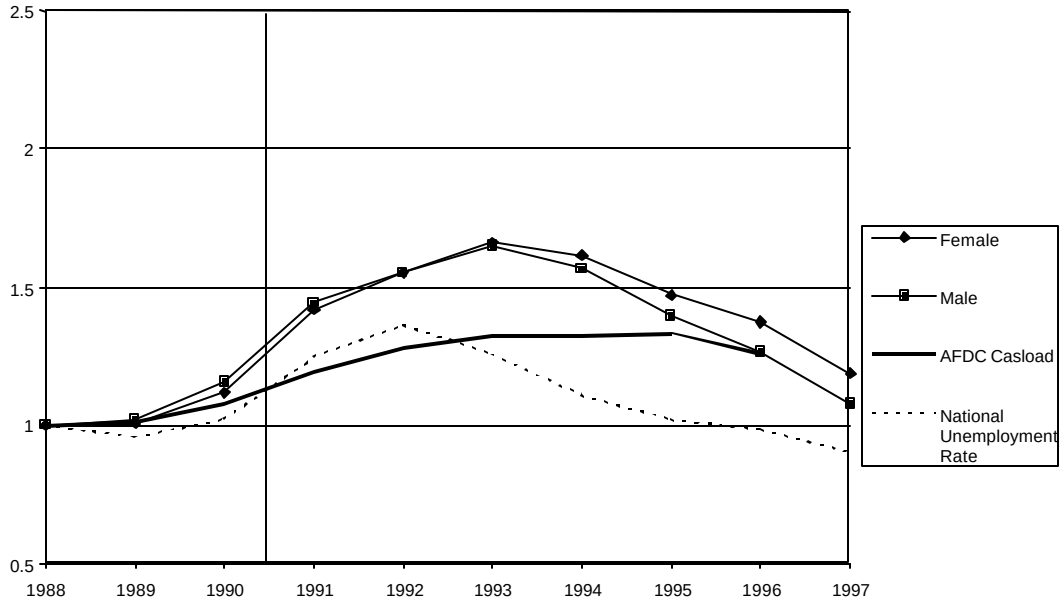
[42] The age-adjustment process used for later series is somewhat different than that used for the national series presented above. For each group (e.g., women in Delaware) we first computed "expected" applications in each year after 1988 based on national 1988 age specific application rates, by sex, weighted by the current year age distribution of the group in the relevant geographic area. Actual applications were then divided by expected applications and the result was divided by the corresponding value for 1988 to obtain the index value. This process implicitly uses current year population age distributions to weight age group specific application growth, rather than weights based on the 1990 population.

[43] The age adjustment method used for the AFDC caseload series is analogous to the method used for the SSI application series. Details may be found in Lewin (1997a). The caseload data were obtained from the Administration of Children and Families.

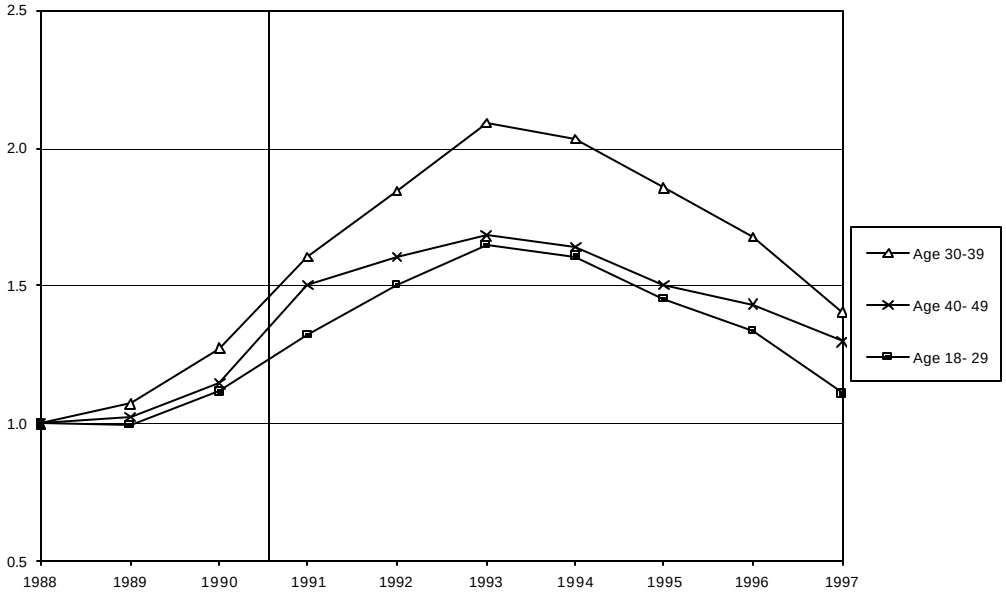
[44] In 1988 the application rates for the young, middle, and old age groups were 40, 49 and 80, respectively. They rose to peaks of 71, 94 and 120, respectively, in 1993, and then declined to 49, 64 and 83, respectively, in 1997.

Exhibit 4.3
Adult SSI Disability Application Indices, 1988 – 1997

A. By Sex (age adjusted)



B. By Age



Source: The indices are calculated from SSA application data and population data from the Bureau of the Census. The vertical line between 1990 and 1991 represents a break in the source of the application tabulations. The unemployment index is calculated from Bureau of Labor Statistics data, and the AFDC caseload index is calculated from data provided by the Administration for Children and Families and population data. See the text for further details. The data appear in ***Appendix Exhibit D.17***.

In previous work we have examined causes of SSI application growth from 1988 through 1992, and concluded that there were three major explanations in addition to the aging of the baby boom, (Lewin, 1995a, 1995c). The first of these was the 1991 recession. As is evident from a comparison of the national unemployment rate to the application indices over this period (***Exhibit 4.3***), the business cycle offers a plausible explanation of growth and then decline. In our earlier work, we showed that male applications were more sensitive to the business cycle than female applications, which implies that, other things equal, the male rate will rise relative to the female rate during a recession and fall during a recovery. This would imply an increase in the male application rate relative to the female application rate in the earlier part of the period, and a decline later on. If correct, then the synchronous growth of the male and female indices at the beginning of the series masks the effect of some factor that is offsetting the impact of the recession on relative growth rates.

A second major cause of application growth, cuts in GA programs, also implies more rapid growth for males than females in the first half of the period and a more rapid decline in the second, other things constant. Three large states, and several smaller ones, substantially reduced their GA programs in 1991 and 1992. Michigan essentially eliminated its program, and both Ohio and Illinois reduced their GA caseloads by about half. Our earlier work showed that the impact of these changes was somewhat larger for men than for women.[45] This adds to the difficulty of explaining why the male and female indices grew at the same rate in the first half of the period. Other state policy changes – especially outreach to potential SSI recipients, and Medicaid reforms -- were identified as possible contributors to application growth during this period, too, but it was not feasible to demonstrate this empirically. We do not know enough about such changes to assess whether they would have relatively larger impacts on applications from women. Such activities might have shifted some adult AFDC recipients into SSI.

The third major cause of application growth in the first half of the 1988-1997 period is changes in SSI itself. Changes in rules regarding the treatment of evidence from the applicant's physician ("source evidence") and regarding the assessment of pain and other symptoms clearly made it easier to obtain benefits on the basis of psychiatric and musculoskeletal disorders. Several court decisions made it easier to obtain benefits because of severe substance abuse disorders (see Lewin, 1997b). SSA's own outreach efforts also may have made a substantial contribution to application growth (GAO, 1994). Finally, the 1990 Supreme Court decision in the case of *Zebley vs. Sullivan*, along with subsequent change in the regulations concerning mental disorders for children, substantially expanded eligibility for children and may have had a spillover effect on adult applications. Outreach and advocacy efforts that aimed to help potentially eligible children apply may also have helped some of their parents, as well as other adults, become aware of their possible eligibility and apply. Collectively, all of these changes are sometimes alleged to reflect, or perhaps contribute to, a change in the "adjudicative climate" that encourages applications by favoring allowances in marginal cases.

Our earlier research indicated that these program changes contributed to an increase in applications from women relative to applications from men, and to an increase in applications from younger age groups relative to older ones (Lewin, 1995a). It also seems likely that any

[45] See Lewin (1995a).

spillover effect of eligibility expansions for children would be greater for women and young adults than for men and older adults. Thus, these changes may explain why the age-adjusted application rate for women kept pace with that for men in the first part of the period, despite the fact that the recession and GA cuts apparently had larger impacts on men. The evidence we examined also made it clear that the effects of these changes were greatest for the younger age groups. It seems very likely that a considerable number of those induced to apply by these changes were AFDC recipients, especially among women in the two younger age groups, and that this resulted in a shift in participation from AFDC to SSI.

The most significant changes to SSI in the latter part of the period were the ending of eligibility for those whose drug abuse or alcoholism (DA&A) is material to their disability, and tightening of eligibility for children.[46] Eligibility for DA&A cases was first tightened in 1994, and eliminated entirely on January 1, 1997. About 72 percent of the beneficiaries who were targeted by the DA&A reforms were male, and the share of targeted male beneficiaries who retained eligibility as of December 1997 was lower than for women (33 percent vs. 37 percent).[47] These reforms likely discouraged potential applicants, and the above statistics suggest that this would reduce applications from men relative to those from women. The new SSI child reforms would also reduce applications from women relative to those from men.

Two other findings from our earlier work are of less importance for overall trends, but are relevant to variation in trends across sex and age groups. The first is that the HIV/AIDS epidemic had a positive effect on applications, especially from men and especially in the middle age group (Lewin, 1995a). It may be that the size of this effect has abated since 1992, contributing to a relative decline in the number of male applicants. Second, holding other things constant, we found a positive association between growth in the share of children living in one-parent households -- a crude proxy for changes in the share of two-parent families -- and applicants in the younger age groups, especially among women (Lewin, 1995a).

Another finding from our earlier work deserves mention. SSI applications from non-citizens grew much more rapidly than those from citizens during the 1988-1992 period. There were two competing explanations of the cause: legalizations under the Immigration Reform and Control Act of 1986 (IRCA), and larger impacts of the recession on immigrant employment. We were not able to distinguish between these causes. Growth of applications from non-citizens is clearly a proximate cause of the very high application growth rates in California and Florida, and may have contributed significantly to growth in some other states, but it may simply reflect greater impacts of other factors on applications from these groups.

Both DeLiere (1997) and Acemoglu and Angrist (1998) suggest that the 1990 Americans with Disabilities Act (ADA) contributed to growth in SSI (and DI) caseloads in the years following its passage. The evidence they present appears to support the theory that the ADA has created a deterrent to hiring people with disabilities, because of concerns about high potential accommodation or litigation costs. Induced declines in job opportunities for people with disabilities would presumably increase the attractiveness of participating in SSI or DI relative to

[46] See Lewin (1997), for more details on these reforms.
[47] See Lewin (1998b).

work. If the ADA contributed positively to SSI application growth over this period, we would expect the contribution to be greater for men than for women, because the research on this issue to date has found larger employment effects for men. This would make it more difficult to explain the relative growth in the application indices for women. Burkhauser and Bound (forthcoming) are skeptical about the findings of this research because it does not adequately account for the differential impact of the recession on employment of people with and without disabilities.

It is interesting to compare the trends in the SSI application indices to the trend in the AFDC/TANF caseload index. In comparing these series, it is important to keep in mind that the former series are indices of the flow of applicants to SSI while the latter is an index of the stock of AFDC/TANF cases. Ideally, we would compare the application indices to an index for entry into AFDC/TANF, which would show larger growth than the caseload series in the earlier part of the period and a larger decline in the latter part.[48] Unfortunately, flow data for AFDC/TANF are not available at the national level.

The comparison of the indices strongly suggests that some of the forces behind SSI application trends during this period had similar impacts on AFDC/TANF caseloads. The two most obvious, common forces are the business cycle and growth in the number of single-parent families. The national data neither confirm nor refute the hypothesis that declines in AFDC/TANF caseloads in the last few years have been partially achieved through shifts of adult AFDC/TANF recipients into SSI.

To summarize, the period under examination is characterized by first rapid growth in application rates, and then rapid decline. Application rates grew faster for women than for men. This is partly explained by the aging of the baby boom and sex differences in application rates by age, but not entirely. Application rates also grew faster for the middle age group than for both the young and, especially, the old age group. While these patterns are consistent with the hypothesis that early AFDC/TANF reforms "pushed" some adults to apply for SSI, there are other possible explanations of the variation in trends by sex and age. It may be that there was a substantial shift in program participation of women from AFDC to SSI due to factors other than AFDC/TANF reforms, including significant SSI program changes.

The national indices alone tell us very little about the relative importance of the many factors behind application trends during this period. Analysis of trends in individual states may be more informative, because of variation across states in the factors themselves. We turn to this in the next section.

[48] It would also be preferable to have an index of adult AFDC/TANF recipients, rather than caseloads (i.e., families), because in recent years there has been an increase in "child-only" AFDC/TANF families, and this may be partly related to movement of their parents from AFDC/TANF to SSI.

III. SSI APPLICATION TRENDS IN SELECTED STATES

A. Overview

In this section we examine trends in adult SSI disability application indices in 15 selected states, by sex and by age. The main purpose of this examination is to assess whether the trends observed at the national level – growth for women relative to men and growth for younger adults relative to older adults – are related to significant state-level AFDC and GA reforms during the pre-TANF period. If the very significant variation in national trends by age and sex is due, in part, to AFDC and/or GA reforms, we would expect to see evidence of this from comparison of trends in states with relatively significant reforms to those for states without reforms that are otherwise similar. The analysis of the GA reforms also illustrates the strengths and weaknesses of this type of analysis. A secondary purpose of this examination is further assessment of the effect of the business cycle on applications.

We selected seven states that had AFDC reforms prior to PRWORA that included significant TANF-like features: California, Connecticut, Florida, Georgia, Massachusetts, Michigan, and Wisconsin.[49] We also selected comparison states within the same region. Most of these states had no statewide AFDC reforms that would likely push adult recipients into SSI, but most also had demonstration reforms in some counties, and/or statewide AFDC reforms that would not likely affect SSI applications. It is very difficult to assess the possible impacts of reforms implemented in any given state during this period because it is difficult to determine the extent to which each of the many approved reforms were actually implemented. One aspect of this is that most reforms provided exemptions of some sort for people with disabilities. Information on details of the exemptions and, especially, how they were implemented is difficult to obtain.

The 15 states selected include nine of the ten largest states in terms of SSI applications (all but Louisiana). We list the pre-1997 reforms we have identified in these states below (***Exhibit 4.4***), and have placed an asterisk (*) next to those which, in our judgment, seem most likely to have had an impact on SSI applications before 1997. This judgment is based on more specific information about the reforms listed, as described in ***Appendix D***. Several of the reforms that were approved late in the period may have an impact on SSI applications in 1997 or later.

We are also interested in GA program changes. An important reason for including Illinois and Ohio among the selected states is to assess whether findings concerning termination of Michigan's GA program are replicated, at least qualitatively, in these states. Two of the states included because of our interest in their AFDC reforms also implemented GA cuts during the period, Massachusetts and Wisconsin.

We present two graphs for each of these states in ***Appendix D***. Each pair is analogous to the two national graphs presented previously in ***Exhibit 4.3***, including age-adjusted application indices for each sex, three age group application indices, an unemployment rate index, and an AFDC caseload index. These are constructed in the same manner as the national indices, using state

[49] We visited five of these seven states (all but Georgia and Massachusetts) for this project, and their reforms are detailed in our site visit report.

data, and control to a substantial extent for the effects of the aging of the baby boom cohort. We also show when the major reforms cited in ***Exhibit 4.4***, if any, were implemented. Some of the graphs appear later in this chapter, miniaturized to allow graphs from two or more states on a single page for comparison purposes.

A quick scan of the exhibits for all 15 states shows the following (***Appendix Exhibits D.1*** through ***D.15***):

- In all states, application indices increased substantially in the first part of the 1988-1997 period, and declined in the later years, but the magnitudes of growth and decline vary considerably.

- In all states, the application indices for women increase relative to those for men.

- In all states, application indices for the two younger age groups increase relative to those for the oldest age group. In most states, the rate for the middle age group grows faster than the rate for the youngest age group, but this is not uniform.

Exhibit 4.4
Summary of AFDC and GA Reforms before 1997 in Selected States

MIDWESTERN STATES
Illinois
• Work Pays Project approved in November 1993 • Work and Responsibility program approved in October 1995; new provisions approved in August 1996 • GA program cut significantly in 2nd Quarter of 1992*
Iowa
• Family Investment Plan (FIP) implemented in four counties in 1993 and approved for statewide in April 1996.
Michigan
• To Strengthen Michigan Families began in October 1992 • Sanction plan approved in April 1995* • Family Independence Program implemented in October 1996 • GA program essentially eliminated in 4th Quarter of 1991*
Ohio
• Ohio First implemented in July 1996 • GA program cut significantly in 2nd Quarter of 1992*
Wisconsin
• Gradual benefit cuts, beginning in 1986 and continuing throughout the pre-PRWORA period* • Parental and Family Responsibility Demonstration implemented in July 1994 • AFDC Benefit Cap (ABC) program implemented statewide in January 1995 • Work Not Welfare Program implemented in Fond du Lac and Pierce counties in January 1995 • Self Sufficiency First implemented statewide in March 1996* • Child Support Waiver demonstration project implemented in August 1996 • GA program cut significantly in 4th Quarter of 1995*

*Indicates reforms most likely to have an impact on adult SSI disability applications before 1997.

Exhibit 4.4 (continued)
Summary of AFDC and GA Reforms before 1997 in Selected States

NORTHEASTERN STATES
Connecticut
• A Fair Chance implemented statewide in November 1994*
• Reach for Jobs First implemented in January 1996
Massachusetts
• Transitional Aid to Families with Dependent Children implemented in October 1995*
• TANF Program implemented in September 1996
• GA program cut significantly in 2nd Quarter of 1992*
New York
• Child Assistance Program introduced in 1988 and gradually adopted in many counties over the period.
• Jobs First Demonstration approved for six counties in October 1994, but implementation was very slow
Pennsylvania
• Pathways to Independence Program approved for Lancaster County November 1994, but implementation was very slow
PACIFIC STATES
California
• Early provisions of the Work Pays Demonstration Project approved in March 1994*
• Work First model mandated for all county GAIN (JOBS) programs in 1995*
Oregon
• Oregon Option implemented statewide in April 1996
Washington
• Success through Employment Program (STEP) implemented in October 1995
SOUTHERN STATES
Florida
• Family Transition Program (FTP) implemented in two counties May 1994, expanded to eight counties in October 1995*
• Work and Gain Economic Self-Sufficiency (WAGES) implemented in October 1996
Georgia
• Personal Accountability and Responsibility program began January 1994*
• Work for Welfare Project implemented in 10 counties in November 1995*
Texas
• Achieving Change for Texans approved in March 1996, but implementation has been slow

*Indicates reforms most likely to have an impact on adult SSI disability applications before 1997.
Source: See ***Appendix D***.

- Comparisons of application indices to unemployment indices make it clear that the business cycle is not the only explanation of growth. Two of the northeastern states, Connecticut and Massachusetts, experienced the most severe recessions and had the weakest recoveries during this period (***Exhibit 4.5***). Their application indices were among those with the greatest increases and among those with the smallest declines in the last few years. At the same time, however, some Midwestern states that experienced relatively mild recessions (e.g., Michigan) had increases in application indices that were of the same magnitude as those in Massachusetts and Connecticut. Further, the dynamics of the relationship between the unemployment rate and the application indices appears to vary across states; unemployment rate changes lead changes in the indices in most states (e.g., Connecticut), but lag them in others (e.g., California).

- States with relatively mild recessions and no reforms likely to impact SSI applications in the early part of the 1988-1997 period nonetheless experienced substantial increases in their application indices in the middle of the period. This is most evident in Iowa. In 1992, 1993 and 1994, age-adjusted application rates for both men and women in Iowa were about 50 percent above their 1988 values – almost as high as the corresponding national values -- even

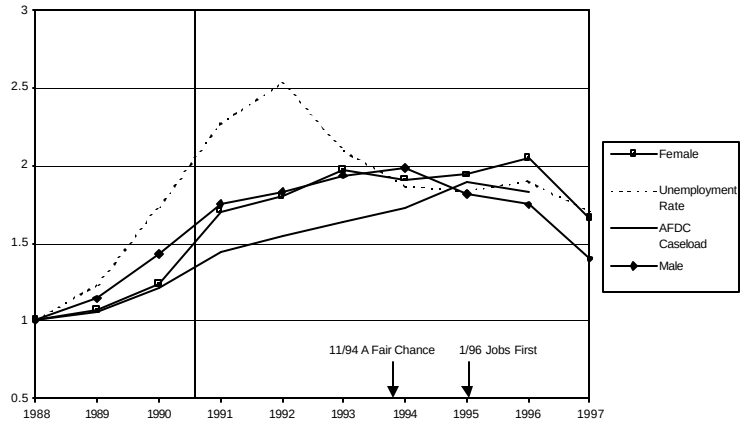
though the unemployment rate was essentially unchanged from 1988.[50] The absence of a substantial recession or significant reforms in Iowa suggests that SSI program changes account for this growth. Although growth is greatest for the middle age group, as in other states, there is also substantial growth for the oldest age group, suggesting that program changes had a substantial effect on growth for all age groups.

- In general, states with relatively high SSI application growth also had relatively high AFDC caseload growth (e.g., Connecticut, Massachusetts, and Michigan), and vice versa (e.g., Iowa and Wisconsin). This is consistent with our previous observation that significant common factors appear to be driving participation in both programs, such as the economy and growth in the number of female-headed households. Michigan is an exception, having had very high SSI application growth and relatively modest AFDC caseload growth.

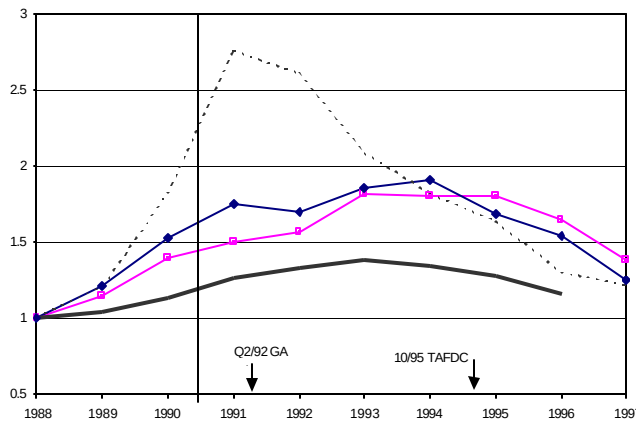
In the remainder of this section, we consider the trends in the selected states in more detail (region-by-region), focusing on what can be learned about the effects of the pre-1997 GA and AFDC reforms. One theme that emerges is that it is extremely difficult to see the impacts of any but the most extreme reforms through such an examination, and even in such cases it is very problematic to accurately measure the impacts of the reforms by making comparisons across states. This is both because strong comparison states are hard to find for each reform state, and because comparison states that appear equally well matched to a reform state can experience very different trends in their application indices -- differences that are presumably explained by other factors.

[50] While welfare reform in four counties might have contributed to growth in the Iowa indices after August 1983, the almost all of the growth in the indices was before that period.

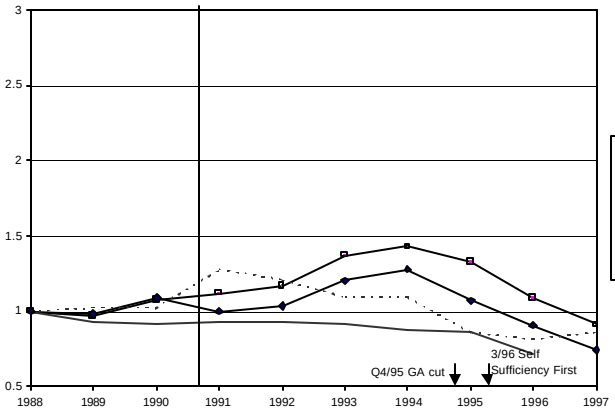
Exhibit 4.5
Comparison of Unemployment SSI Application, AFDC Caseload, and Indices, by Sex, for Selected States



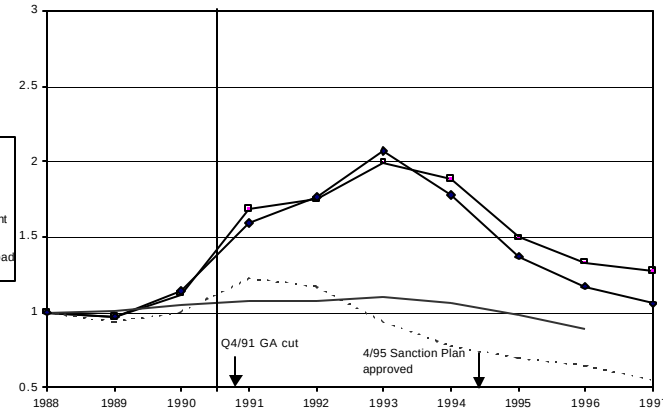
Connecticut



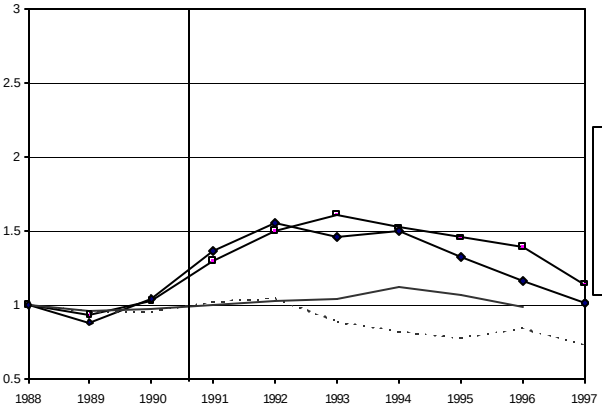
Massachusetts



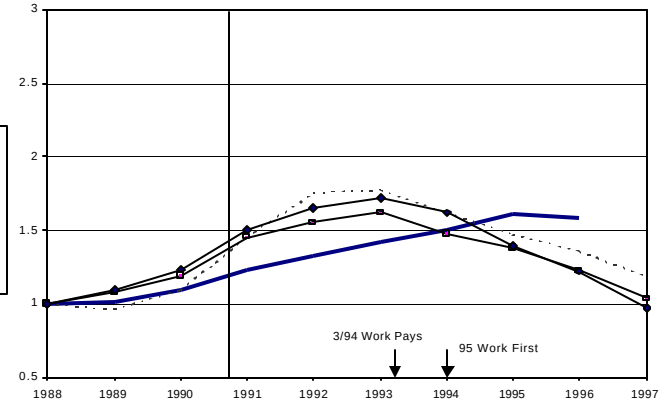
Wisconsin



Michigan



Iowa



California

See ***Appendix D*** for full-size graphs and application indices for each age group.

B. Midwestern States

The Midwestern states selected are of greatest interest to the analysis because two of them, Michigan and Wisconsin were considered to be at the forefront of AFDC reforms. Some would argue that the relatively large declines in AFDC/TANF caseloads in these states are as much due to their improving economies as to the state reforms. Whatever the cause, the early and substantial declines in their AFDC caseload indices, especially for Wisconsin, are remarkable when compared to experiences in other states. AFDC changes in Michigan are confounded by the fact that the State essentially eliminated its GA program in 1991. GA was cut somewhat in Wisconsin, but not until the last quarter of 1995.

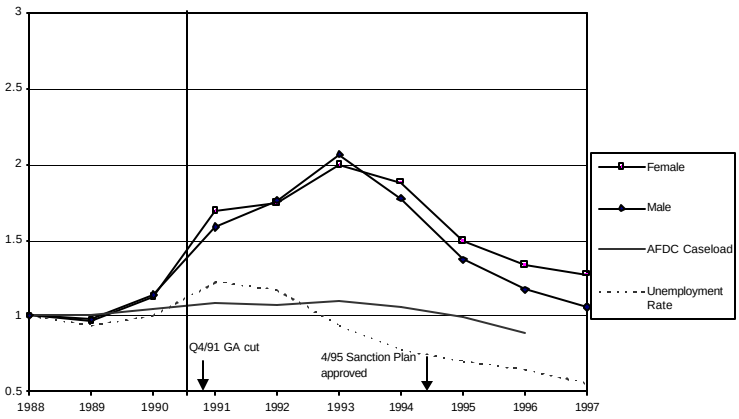
We compare these states to three Midwestern states (Iowa, Illinois, Ohio) and Pennsylvania. Iowa did test a significant reform in some counties, starting in 1993 (***Exhibit 4.6***), and it is possible that reforms implemented in Illinois late in 1995 would have had an impact after that date. Illinois and Ohio both cut their GA programs very significantly in 1992. Pennsylvania is also a reasonable comparison state for this group, and implemented no major GA or AFDC reforms prior to 1997. The recessions in Illinois, Iowa, Michigan, and, especially, Wisconsin were mild relative to those in Ohio and Pennsylvania, as well as to those in most other states, and their recoveries were earlier.

Michigan's SSI application indices for both sexes increased by more than those in any other state during the first five years of the 1988-1997 period. Earlier pooled time-series analysis of state data suggested that about 34 percent of SSI application growth from 1988 through 1992 – about 7,800 of 1992 applications -- was due to the GA cut (Lewin, 1995a). Analysis of Michigan GA data that were linked to SSA data by Bound et al. (1998) found that from 25 to 67 percent of growth in SSI applications from 1990 to 1991 in Michigan could be attributed to the ending of GA (3,700 to 9,800 applications). They also attributed substantial SSI applications in 1992 and 1993 to the GA cuts (as many as 8,400 in each year), but the size of the impact clearly diminished after 1991.

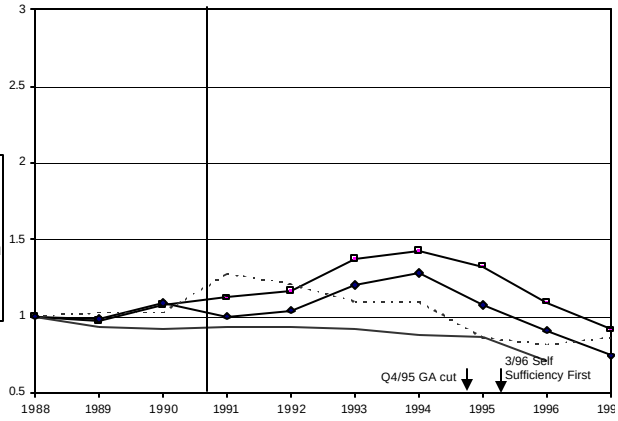
In 1990, the indices for Michigan, Iowa, and Wisconsin are all very close to one another. Comparison of Michigan's indices to Iowa's in the same year suggest that termination of the GA program accounts for 45 percent of growth in Michigan's indices from 1988 to 1991, and 30 percent from 1988 to 1992. Comparison of Michigan's indices to Wisconsin's suggests that GA explains a much larger share of the growth in Michigan's indices: over 90 percent from 1988 to 1991, and about 85 percent to 1992.[51] The Iowa estimates compare well to our earlier estimates and the upper-end estimates implied by the analysis of Bound et al. (9,900 applications in 1991, and 8,400 in 1992). The Wisconsin-based estimates are well above the upper-end figures from

[51] To obtain these figures, we first used the indices reported in ***Appendix D***, to obtain a figure for each sex. We then divided the difference between the sex-specific indices for the state pair in the relevant year by the Michigan index minus one. We report the simple average of the two figures rounded to the nearest five percent.

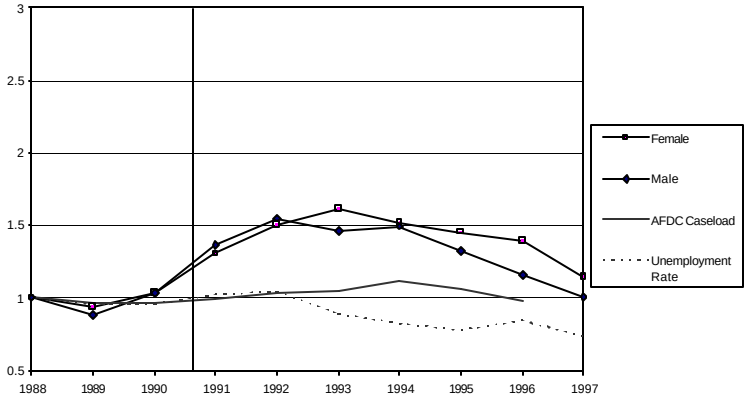
Exhibit 4.6
Comparison of Application Trends by Sex in Selected Midwestern States and Pennsylvania



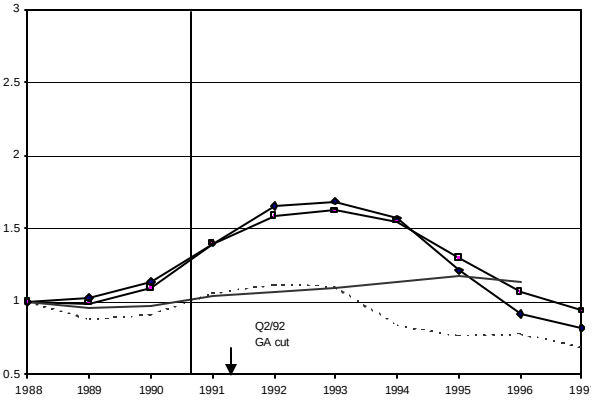
Michigan



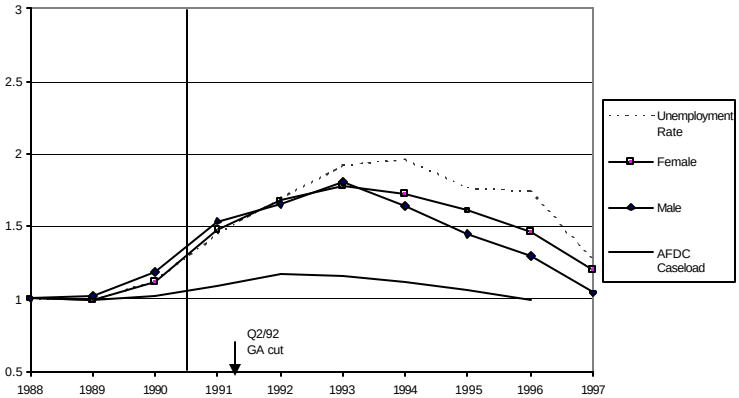
Wisconsin



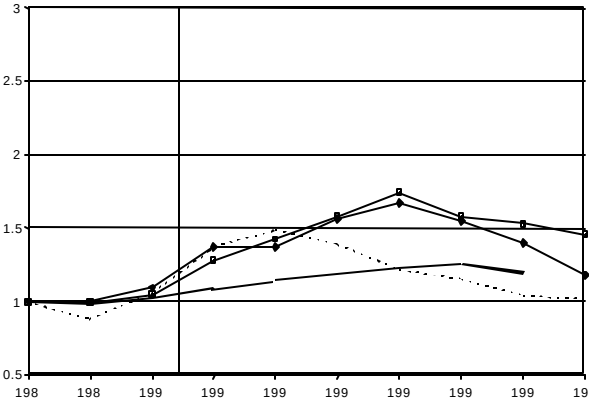
Iowa



Illinois



Ohio



Pennsylvania

See ***Appendix D*** for full-size graphs and application indices for specific age groups.

Bound et al. One reason might be that Bound et al. based their estimates on analysis of actual applications from GA recipients. Substantial outreach efforts by the State and advocacy groups that were initiated concurrently may have drawn in applications from others as well.[52] Some of the growth attributed to termination in the GA program, in our estimates, could be due to these outreach efforts.

Growth in Wisconsin's application indices during the first part of the period is remarkably low when compared to growth in all other states. The peak of the age-adjusted index for men is 1.28, compared to 1.55 for Iowa, and 1.66 for the entire country. It is likely that this reflects Wisconsin's strong economy. The index for women increases to 1.43 in 1994, but this is also below the corresponding maximum values for Iowa and the entire country.

The divergence between the male and female series for Wisconsin begins in 1991, in advance of the most significant of Wisconsin's welfare waiver demonstrations. Competing explanations include: the gradual cuts in AFDC payment amounts that began in 1995 increased the incentive to apply for SSI; the relatively strong Wisconsin economy caused the number of male applicants to fall relative to female applicants in advance of the recovery, which had the same effect in other states only later; and administrative changes in SSI had a larger impact on male applications than female applications.

It is difficult to argue, based on this information alone, that AFDC reforms in Wisconsin contributed to SSI application growth. The facts seem equally consistent with the view expressed by welfare advocacy organizations in Wisconsin that the State's welfare diversion programs divert individuals from applying for programs other than TANF, including SSI.[53] The only other apparent explanation for the fact that the application index in Wisconsin falls below the 1988 level by 1996 is the strong economy.

Illinois and Ohio both implemented significant GA cuts in 1992. These cuts were about half as large as Michigan's when measured in terms of terminations per capita (Lewin, 1995a). Both states experienced application index growth above the national average, but in Ohio's case, the severity of the recession provides an alternative explanation. Illinois experienced a relatively mild recession, comparable to Michigan's, but somewhat worse than Iowa's. Comparison of the indices for Illinois and Iowa suggests that GA cuts in Illinois account for relatively little of the increase in the Illinois application indices.

Pennsylvania seems a better comparison state for Ohio than any Midwestern state because both of these States experienced exceptionally sharp increases in their unemployment rates. The male and female SSI application indices in these two states are remarkably similar, and, as with Illinois, the comparison provides no evidence that the GA cuts had an impact on Ohio's indices.

[52] Michigan's first AFDC reform during the period was implemented in the fourth quarter of 1992, but was focused on providing transitional assistance for families exiting AFDC and seems unlikely to have had an impact on SSI applications.

[53] See the report on our Wisconsin site visit.

C. Northeastern States

Two northeastern states, Massachusetts and Connecticut, had significant AFDC reforms, although late in the 1988-1997 period. Massachusetts also implemented a significant cut in its GA program in 1992. We compare their trends to those in New York and Pennsylvania, neither of which had AFDC reforms that were likely to increase SSI applications before 1997 (***Exhibit 4.7***). All of the northeastern states experienced a recession that was more severe than for the country as a whole, but the recessions in Massachusetts and Connecticut were especially severe.

The GA and AFDC reforms in Massachusetts might explain why the application indices for both sexes increased by much more than those for New York and Pennsylvania, but an alternative explanation is that the severity of the recession explains the difference. The growth in the indices in Connecticut through 1993 is actually greater than in Massachusetts, even though Connecticut did not cut its GA program and its recession was somewhat less severe, at least as measured by the unemployment rate index. In both states, there is a remarkable increase in the female indices relative to the male indices immediately following the first AFDC reforms, especially in Connecticut. Comparison of the indices in these two states to the corresponding series in New York suggests that AFDC reforms in the former played a role in increasing the female application rate relative to the male rate, but comparison of the same rates to those for Pennsylvania do not.

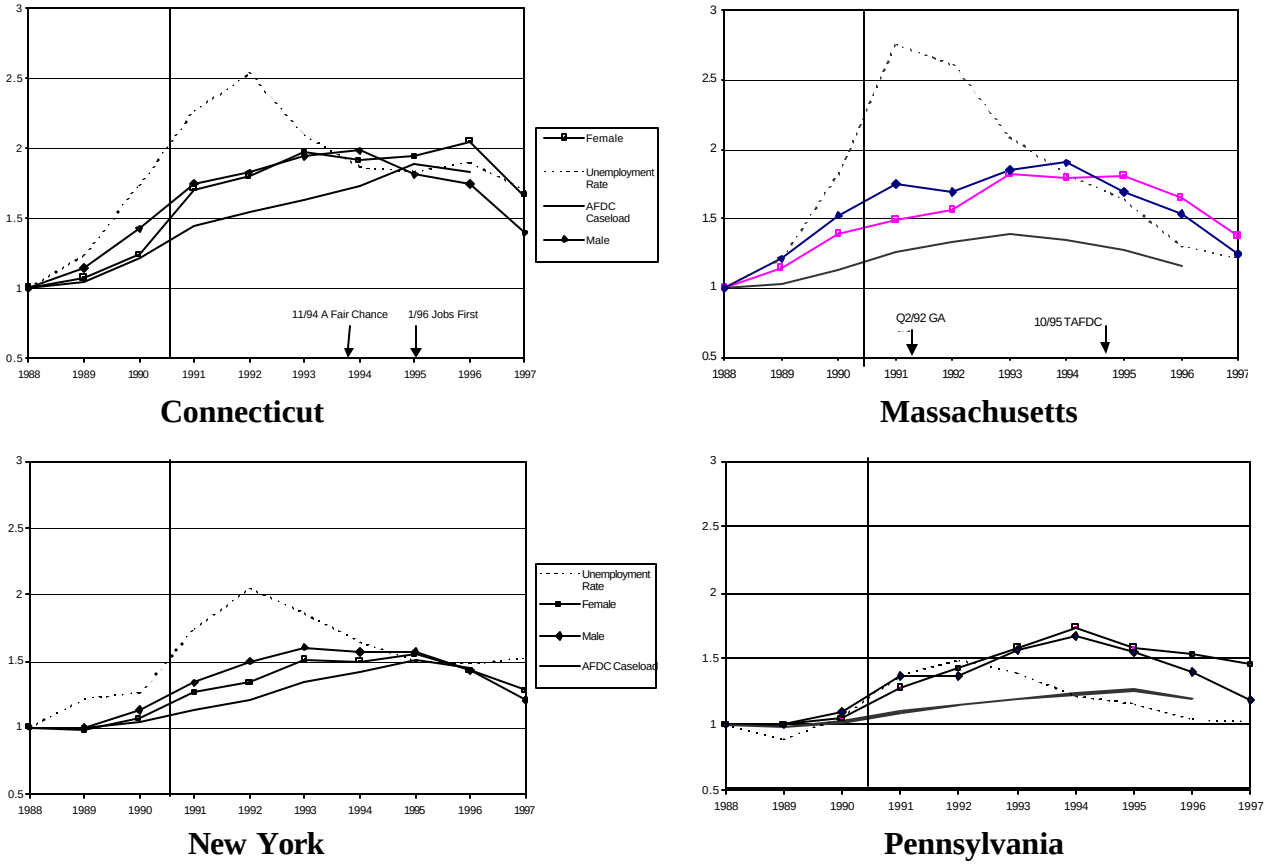
In sum, these simple comparisons offer no clear evidence about the effects of the GA and AFDC reforms in Massachusetts and Connecticut on SSI applications.

D. Pacific Coast States

California implemented significant state-wide AFDC reforms as early as 1994. We compare its trends to those for the other two Pacific coast states (Oregon and Washington), which both had significant reforms but not until at least two years later (***Exhibit 4.8***). California is, unfortunately, difficult to compare to any other single state.

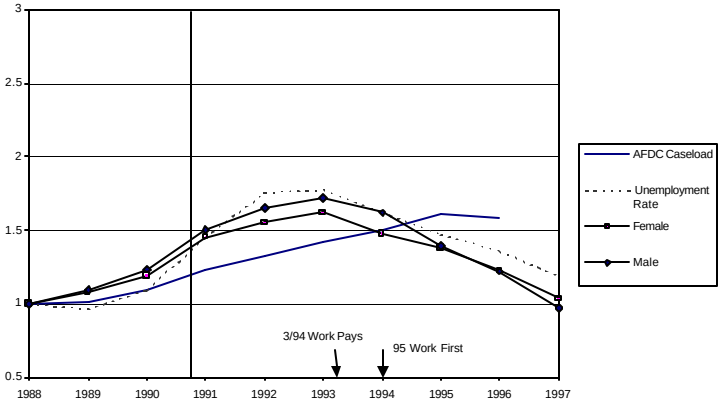
It is possible that California's early reform helps explain the rapid growth in California's indices relative to those of Oregon and, especially, Washington, but the relatively large increase in California's unemployment rate seems a more likely explanation. California's indices were growing substantially more rapidly than those of the other two states well in advance of California's AFDC reform. The high peak for the male index in California relative to that for the female index also seems more consistent with the recession explanation. Further supporting this interpretation, the AFDC caseload index continued to grow rapidly well after the AFDC reform and even after the economy started to improve. If anything, California's data suggest that the 1993 AFDC reform had a negligible impact on SSI applications.

Exhibit 4.7
Comparison of Application Trends by Sex in Selected Northeastern States

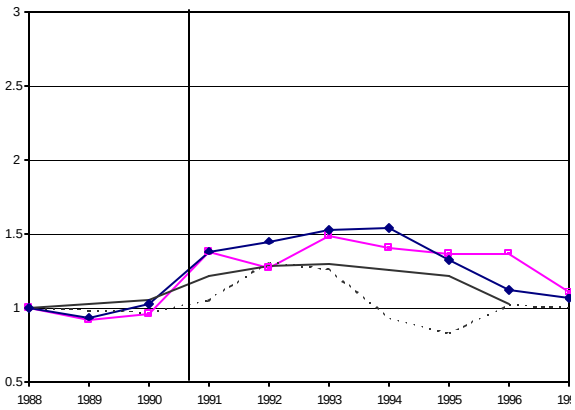


See ***Appendix D*** for full-size graphs and application indices for specific age groups.

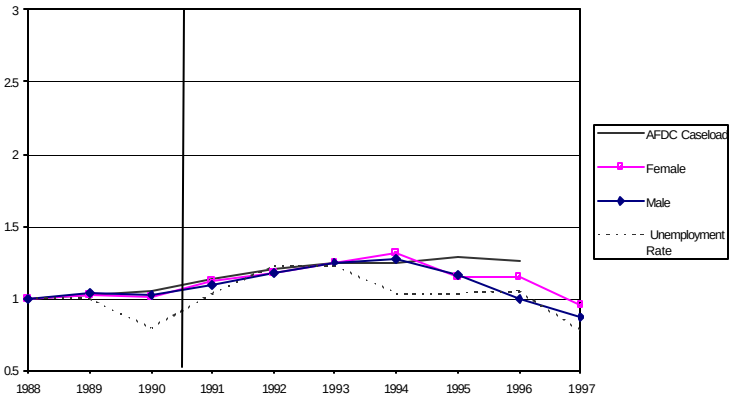
Exhibit 4.8
Comparison of Application Trends by Sex in Pacific Coast States



California



Oregon



Washington

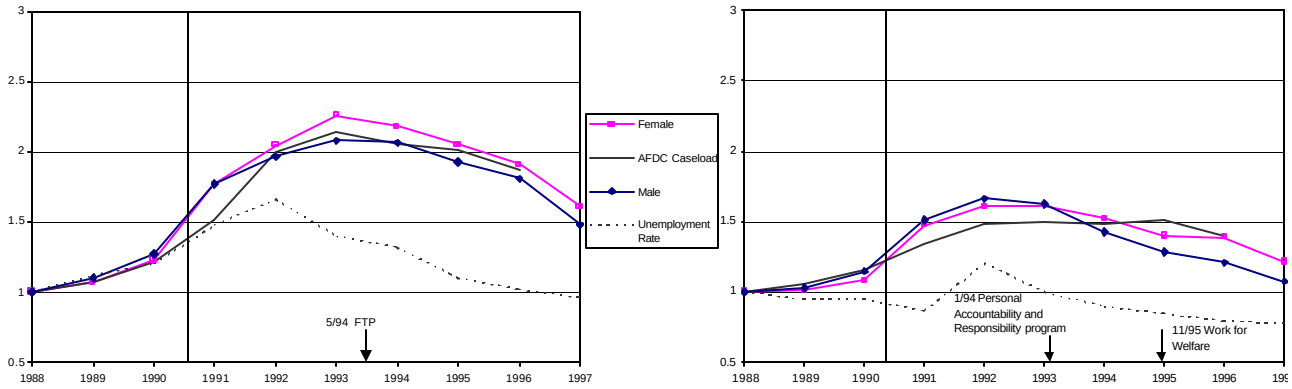
See ***Appendix D*** for full-size graphs and application indices for specific age groups.

E. Southern States

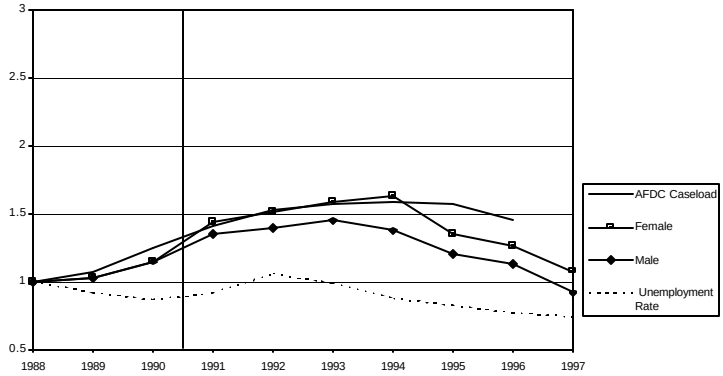
Florida had significant AFDC reforms during the 1988-1997 period, but its reforms were only implemented in part of the state before PRWORA (***Exhibit 4.9***). Georgia instituted AFDC reforms in both 1994 and 1995 that may have had an impact on SSI applications. Texas did not introduce any reforms likely to have an impact on SSI applications before 1996.

There appears to be a clear relationship between the strength of the recession, as measured by the unemployment rate index, and application growth across these three states. There is also a remarkable coincidence of the AFDC caseload index and the application indices in all three states, re-enforcing the observation that common factors seem to be driving participation in these programs. The application indices turn down in advance of the AFDC caseload index in each state. In Georgia, there is an intriguing interruption in the fall of the application index for women in 1996, closely following Georgia's first significant AFDC reforms and coinciding with the first drop in Georgia's AFDC caseload index. In contrast, the men's application index continues to fall in 1996. This pattern is not repeated in either Florida or Texas. It would be premature to make much of this difference, however.

Exhibit 4.9
Comparison of Application Trends by Sex in Selected Southern States



Florida **Georgia**



Texas

See ***Appendix D*** for full-size graphs and application indices for specific age groups.

F. Summary

In summary, the comparison of the application indices across selected states:

- Provides substantial evidence that GA reforms in Michigan had a substantial impact on application growth in that state prior to PRWORA. This is not a new finding, but it serves to illustrate that significant state reforms do show up in comparisons of state application statistics. The comparisons of Michigan to Wisconsin and Iowa also illustrate how difficult it is to estimate the size of even a large reform from such comparisons.

- Does not provide clear evidence of impacts for what appear to be very significant GA reforms in Illinois and Ohio on SSI applications, based on comparisons with series for other states. In general, such comparisons are problematic because too many "other factors," including the economy and SSI program changes, affected the relative growth of application indices across states during this period. It is difficult to attribute any share of differences in the series for a pair of states to any single factor unless that factor is extremely strong, as were the GA cuts in Michigan.

- Prove no concrete evidence that early AFDC reforms had a substantial impact on SSI applications. Perhaps the most interesting finding in this regard is the fact that SSI application growth in Wisconsin, whose AFDC caseload index fell substantially over the period, had much lower application growth than its neighbors. In general comparisons of AFDC caseload indices to application indices suggest that a set of common factors was driving both indices over this period – most likely the economy and perhaps growth in the number of female-headed households.

In the next section, we use econometric methods to try to improve upon the findings from the pairwise comparisons made above. One reason the pairwise comparisons are problematic is that the business cycle varied substantially from state to state, as did its effect on applications. In comparing the indices in a pair of states for the purpose of assessing the effects of reforms in one of them, it is not possible to net out the perhaps disparate effects of the business cycle through simple visual comparisons. The econometric analysis focuses on assessing the behavior of application series in states that instituted reforms which might have affected SSI applications before 1997, *after controlling for (netting out) business cycle effects*, along with the effects of the aging of the baby boom cohort.

IV. POOLED TIME-SERIES ANALYSIS OF STATE SSI APPLICATIONS

A. Overview

In this section, we present findings from state-level pooled time-series analysis of adult SSI disability application indices over the period from 1988 to 1996. In interpreting the findings from this analysis, it is important to keep in mind that we have already controlled for population growth and the aging of the baby boom through the construction of the indices that are used as the dependent variables.

The analysis presented focuses on application indices in states with significant AFDC and GA reforms before 1997, after controlling for business cycle effects. We arrived at the specification presented after a significant effort to develop models that included explanatory variables to capture the effects of: the business cycle; GA cuts; changes in basic AFDC program parameters; various AFDC waivers; immigration; and AIDS/HIV. We did not obtain significant effects for variables other than the business cycle variables and the GA variable. Possible reasons are limited independent time-series variation across states in some of the variables over the period; measurement error; and the likelihood that changes in some of the variables we included have little impact on SSI applications. More information about the variables used in these models appears in ***Appendix Exhibit D.19.***

In brief, the approach we took to developing the models presented was to control for the business cycle as best we could based on periods in which state application series were not likely to be affected by GA or AFDC reforms. We accomplished this by modeling annual changes in the log of the application indices as a function of several labor market variables, year dummies, and a set of "state-year" dummies that effectively remove the corresponding observations from determining the coefficients for the labor market variables and year dummies. The observations "removed" were those we thought most likely to be affected by state reforms. We believe that the resulting specification comes as close as we feasibly can with annual state data at this level of aggregation to determining the extent to which the business cycle and welfare reforms account for the behavior of the indices over the 1988-1996 period. The coefficient of each state-year dummy estimates the percent change in the index for the corresponding state and year, after controlling for the economy and any national factors captured by the year dummy.

We present details of the specifications in ***Section IV.B***. Model estimates are presented in ***Section IV.C***. In ***Section IV.D*** we use the estimates to reconsider the effects of reforms in individual states. The findings are summarized in ***Section IV.E***.

B. Model Specification

We estimate pooled time-series models for each of five application indices – male and female indices, and indices for each of the three age groups. We pool the state time-series data. We use annual data for all 50 states plus the District of Columbia for the years from 1988 to 1996, yielding a sample size of 51 x 9 = 459 "state-years."

The dependent variable in each regression is the annual change in the logarithm of an application index for an age or sex group.[54] The change in the logarithm of a group's application can be interpreted as the percent increase in the group's applications index that is due to factors other than change in the size or age distribution of the group.[55] The first change we observe in the

[54] We also estimated models specified as changes in the levels of the indices. In general, results were very comparable. Coefficients tended to be more significant in the log specification. We report the log specifications primarily because of the ease of interpreting the coefficients.

[55] Recall from the previous section that the index for each sex is current-year applications for the group divided by applications "expected" on the basis of national age-specific application rates for that sex in 1988 and the size of the state's population in each age group for that sex in the current year. For age groups, the index is applications

sample period is from 1988 to 1989, so using changes reduces the sample size to 51 x 8 = 408 state years.

This type of specification is known as a state "fixed effects" specification in the econometric literature. It ignores average cross-state covariation between the *levels* of the dependent and explanatory variables in determining the coefficient estimates, on the grounds that such covariation confounds the effects of the explanatory variables on the dependent variables with the effects of unobserved factors that are unique to each state (e.g., geography). For instance, it is well known that unemployment rates vary substantially across states even when all states are at the peak of the business cycle, reflecting cross-state variation in factors such as the structure of the economy, demographic composition, geography, climate, and culture. Cross-state covariation between the unemployment rate and applications at the peak of the business cycle would likely be non-zero, reflecting relationships between such factors and both applications and unemployment rates, rather than the effect of the business cycle.

The stated fixed effects substantially control for the effects of factors that don't change appreciably over the sample period. This includes such factors as geography, racial and ethnic composition of the population, urban/rural residency, education levels, and the political climate. It could be that sharp changes in some such factors have had an impact on applications over the sample period, but such changes are difficult to measure at the state level due to inadequate data. One example is the percent of female households. This grew over the period and has been identified as a source of growth in AFDC caseloads through 1994, but state-level measures are poor.[56]

We include "fixed year effects," to control for factors that are unique to each year and apply to all states. These are implemented by including dummy variables for each year in the model. The coefficient of each year dummy can be thought of as the "intercept" for that year, and interpreted as the growth rate in the year holding the other variables in the model constant. An important reason to include fixed year effects is to capture the average effects of SSI program changes on applications in all states. They also capture the average effects of factors that are not captured by the other explanatory variables in the model.

We also include a substantial set of "state-year" dummies, to capture the effects of specific GA or AFDC reforms – dummies that identify a specific state-year combination. Our approach to specifying these dummies was not very restrictive. We first identified each reform that could reasonably have an impact on applications during the period, and the year in which it was implemented. We then included a dummy variable for that state that is equal to one only in the implementation year, a second that is equal to one only in the year after implementation, etc., through the third year after implementation. This yields a perfect fit in that state in each of the years that were "dummied out," and those observations have no influence on the estimates of the

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in the age group divided by expected applications for the age group, where the latter is again based on national application rates in 1988 and the size of the state population in the age group in the current year.

[56] A further discussion of this variable appears in **Lewin (1997).** In the AFDC caseload analysis reported there, we did find that marriage and divorce rates had statistically significant coefficients in some models, but estimated effects were small. These rates change slowly over time, making it difficult to identify their effects in this type of analysis.

coefficients for the other variables. The dummy coefficients themselves can be interpreted as the growth in applications in the corresponding state and year *after controlling for the other variables in the model* – i.e., business cycle and year effects (as well as growth and aging of the population). We count the year in which the state reform was implemented as the first year, and assume that the effect of the program change on application growth is zero after the fourth year.[57] Hence, we typically dummy out four observations in a row in a state, but the period is sometimes longer because of sequential reforms, and sometimes shorter because the four-year period is truncated at the end or beginning of the sample.

Most of the state-year dummy variables are based on the AFDC and GA reforms listed in ***Exhibit 4.4***. A few are based on GA reforms that occurred no more than three years prior to 1989, or GA reforms in other states that occurred during the period, but which were substantially smaller in terms of GA recipient reductions per capita than those discussed earlier.[58] A total of 67 dummies, including the eight-year dummies, are included. This effectively leaves 408 – 67 = 341 observations to determine the coefficients of the business cycle variables.

We experimented with three variables to control for the effects of business cycles at the state level: the unemployment rate; the labor force participation rate; and (retail and wholesale) trade employment per capita.[59] The unemployment rate is the measure most often used to capture business cycle effects. In earlier work, we found that reductions in the labor force participation rate are associated with increases in SSI applicants after holding the unemployment rate constant (Lewin, 1995b). This may be due to a "discouraged worker" effect – unemployed workers leaving the ranks of those counted as unemployed because they stop looking for work. Similarly, trade employment per capita proved to have a strong negative relationship with AFDC caseloads after controlling for the unemployment rate in an earlier analysis of AFDC caseloads, perhaps because employment in the trade sector is a better indicator of the strength of the labor market for low-skill workers than the overall unemployment rate (***Lewin, 1997***).

Each of the labor market variables was converted to changes in logarithms. Because the application indices are also changes in logarithms, the coefficient of each labor market variable can be interpreted as the *elasticity* of applications with respect to the variable (i.e., the percent change in applications per percent change in the variable). Because changes in the labor market may affect SSI applications with a substantial lag (while potential applicants look for work and perhaps spend down their assets to qualify), we included the first and second lag of each variable along with the current value. Another reason to include lags is that when the economy deteriorates, applications may first surge, then decline after the initial impact. Thus, a total of nine labor market variables are included in the model when all three labor market measures are

[57] In the cases of interest this assumption is not restrictive for our sample because the sample period ends in or before the third year following the reform.

[58] The states and years that we include dummies for are (one dummy for each year in the range indicated): California (1994 – 1996); Connecticut (1995, 1996); District of Columbia (1992 – 1995); Florida (1995, 1996); Illinois (1992 – 1996); Maine (1992 – 1995); Maryland (1993 – 1996); Massachusetts (1992 – 1996); Minnesota (1992 – 1996); Michigan (1991 – 1996); Ohio (1992 – 1996); Virginia (1992 – 1995); West Virginia (1989 – 1991); and Wisconsin (1994 – 1996). See Lewin (1997a) for details of their GA reforms.

[59] These data were obtained from the website of the Bureau of Labor Statistics. See ***Appendix Exhibit D.19*** for further details on these variables.

used. The sum of the coefficients on the current and lagged values of a labor market measure is the elasticity for the cumulative effect of a change in the variable on applications after three years – referred to as the "long-run" elasticity. Because there is substantial collinearity between the current and lagged values of each variable, we test the joint significance of all three variables, as well as the significance of the long-run elasticity.

We experimented with using all three labor market variables and each possible pair. In the specification with all three, the unemployment rate coefficients and the associated long-run elasticity were statistically insignificant for each of the five applicant groups, while many of the coefficients for the other labor market variables were significant. An F-test failed to reject the hypothesis that all unemployment rate coefficients were zero in each equation. In all equations, except the middle age equation, the test statistic was well below the .05 critical value. Leaving out the unemployment rate had no material effect on the dummy variable coefficients. Hence, we dropped the unemployment rate in the models reported here.[60]

Other than dropping the unemployment rate, we did not attempt to "fine tune" the specification of the labor market variables. While more restrictive specifications might help us better understand the dynamics of labor market effects, the purpose here was different – to simply control for these effects in a reasonable way. It is possible that longer or shorter lags are warranted for some variables.

It is also possible that the estimated coefficients reflect the joint effects of other factors on both the labor market variables and applications. For instance, changes in non-SSA programs might both reduce SSI participation and increase labor force participation, implying a negative association between these two variables that is not due to the effect of a strengthening labor market on SSI applications. Note, though, that the program changes we are interested in have no influence on these coefficients because of the dummy variables we have included to capture their effects.

It is sometimes argued that recessions and recoveries have asymmetric effects on program participation – more specifically, that recessions have large and immediate positive effects on participation, and recoveries have smaller or slower negative effects. Asymmetry is clearly an issue for the number of SSI recipients, because of low termination rates, but may be less of an issue for applications. To test for asymmetries, we split the sample (1989–1992 and 1993–1996), fit the model separately to the two halves, and tested the null hypothesis that the coefficients of the labor market variables are the same. This hypothesis was not rejected for any equation, and the test statistic was well below the critical value in each case.[61]

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[60] The unemployment rate was significant when used alone, and sometimes when used in tandem with just one of the other variables. The F-statistics from the five equations for the test of the hypothesis that all unemployment rate coefficients are zero are: 0.63 for men; 0.31 for women; 1.67 for the youngest age group; 2.12 for the middle age group; and 0.21 for the oldest age group. The .05 critical value of the statistics, which has 3 degrees of freedom in the numerator and 332 in the denominator, is 2.6.

[61] The unemployment variable was not included in the models for this test. The F-statistics from the five equations for the test of this hypothesis are: 1.17 for men; 1.42 for women; 1.28 for the youngest age group; 0.92 for the middle age group; and 1.67 for the oldest age group. The .05 critical value for each statistic, which has 6 degrees of freedom in the numerator and 329 in the denominator, is 2.1.

We use a simple specification for the regression disturbance because implementation of a more complex one did not seem warranted for this exploratory analysis. We assume that the disturbance has a specific form of heteroskedasticity: the variance of the disturbance is inversely proportional to expected applications (i.e., to the denominator of the application index). We also assume that the disturbances are mutually independent, both across states and within states over time. Hence, we used weighted least squares to estimate the model, with expected applications used for weights; the larger a state's expected applications, the more weight it is given in determining the coefficients. The t-statistics reported in the next section might overstate the significance of individual coefficients because we did not adjust them for possible serial correlation, contemporaneous correlation, or heteroskedasticity other than the type of heteroskedasticity assumed. The coefficients should not be biased, however.

C. Estimates

We provide an overview of the regression results in this subsection (***Exhibit 4.10***). In the next subsection we use the coefficients of the state-year specific dummies to re-examine the effects of AFDC and GA reforms on SSI applications.

The long-run elasticities for each of the two labor market variables are statistically significant in four of the five models, and all have the anticipated negative sign.[62] The point estimates for the trade employment elasticity range from negative 0.43 (age 30-39 equation) to negative 1.17 (male equation), while those for the labor force participation elasticity range from negative 0.53 (age 40-64 equation) to negative 1.80 (age 30-39) equation.

In most equations, the coefficients for the current year change for both variables are much larger than those for the lagged values, suggesting that most of the impact of a change in the variable on application growth occurs in the same year. Coefficients for the lags are sometimes positive. It could well be the case that deterioration in the labor market initially increases applications, but that applications subsequently fall after the initial wave, even if the labor market doesn't recover. This would result in positive coefficients for some of the lagged values, as we have found in some cases, but only one of these is significant (the second lag of the trade variable in the age 30-39 equation). Negative, sometimes significant, coefficients prevail for the lagged variables – especially for the labor force participation rate.

Most of the year dummies (third page of ***Exhibit 4.10***) are statistically significant, and some are quite large. The coefficients for 1991 are the largest, and indicate that the application indices in each group increased from 17 to 23 percent in that year alone, *after controlling for business cycle effects and the state program reforms.* This compares to an increase in the aggregate national index of 23 percent. Thus, in this year the bulk of the growth in the index is not accounted for by

[62] An asterisk next to a coefficient indicates that the t-statistic is greater than 1.65 in absolute value. This is the critical value for a two-sided 10% test or a one-sided 5% test. Many of these t-statistics exceed 1.96, the critical value for a two-sided 5% test or a one-sided 2.5% test. It should be kept in mind, however, that the t-statistics may be biased upward.

Exhibit 4.10
Regression Coefficients for Application Index Models

Explanatory Variables		Dep. Var.: Change in *ln(Applications/Expected Applications)*				
		Female	**Male**	**18 - 29**	**30 - 39**	**40 - 64**
ln(Trade Employment per Capita)	current	-0.326	-1.144 *	-0.656 *	-0.664 *	-0.763 *
		(-1.01)	(-3.72)	(-1.73)	(-1.97)	(-2.29)
	1st lag	-0.099	-0.240	-0.058	-0.483	-0.122
		(-0.26)	(-0.65)	(-0.13)	(-1.19)	(-0.31)
	2nd lag	-0.271	0.211	-0.204	0.721 *	-0.226
		(-0.83)	(0.68)	(-0.53)	(2.12)	(-0.67)
	long-run elasticity	**-0.696 ***	**-1.173 ***	**-0.917 ***	**-0.427**	**-1.111 ***
		(-2.20)	**(-3.88)**	**(-2.45)**	**(-1.28)**	**(-3.42)**
ln(Labor Force Participation Rate)	current	-0.619 *	-0.281	-0.583 *	-0.447 *	-0.363
		(-2.42)	(-1.15)	(-1.90)	(-1.65)	(-1.39)
	1st lag	-0.471 *	-0.383	-0.775 *	-0.561 *	-0.287
		(-1.75)	(-1.49)	(-2.38)	(-1.96)	(-1.04)
	2nd lag	-0.218	-0.142	-0.075	-0.793 *	0.118
		(-0.76)	(-0.52)	(-0.22)	(-2.61)	(0.40)
	long-run elasticity	**-1.309 ***	**-0.806**	**-1.432 ***	**-1.801 ***	**-0.533**
		(-2.34)	**(-1.51)**	**(-2.12)**	**(-3.03)**	**(-0.94)**
Michigan Dummies	1991	0.183 *	0.114 *	0.074	0.088 *	0.217 *
		(3.88)	(2.53)	(1.31)	(1.78)	(4.48)
	1992	-0.045	0.028	0.088	0.061	-0.093 *
		(-0.96)	(0.62)	(1.56)	(1.24)	(-1.94)
	1993	0.073	0.117 *	0.178 *	0.131 *	0.019
		(1.60)	(2.66)	(3.18)	(2.70)	(0.42)
	1994	-0.044	-0.112 *	-0.109 *	-0.046	-0.077 *
		(-0.96)	(-2.55)	(-1.91)	(-0.95)	(-1.67)
	1995	-0.139 *	-0.170 *	-0.106 *	-0.221 *	-0.142 *
		(-3.06)	(-3.87)	(-1.86)	(-4.53)	(-3.09)
	1996	-0.072	-0.077 *	-0.080	-0.151 *	-0.024
		(-1.61)	(-1.78)	(-1.39)	(-3.09)	(-0.52)
Wisconsin Dummies	1994	0.061	0.097	0.113	0.130 *	0.024
		(0.97)	(1.62)	(1.44)	(1.95)	(0.38)
	1995	0.025	-0.089	-0.042	-0.109 *	0.034
		(0.41)	(-1.50)	(-0.53)	(-1.65)	(0.55)
	1996	-0.148 *	-0.086	-0.105	-0.054	-0.162 *
		(-2.39)	(-1.45)	(-1.34)	(-0.81)	(-2.63)
Massachusetts Dummies	1992	-0.063	-0.097 *	-0.045	-0.084	-0.103 *
		(-1.07)	(-1.72)	(-0.64)	(-1.37)	(-1.68)
	1993	0.079	0.051	-0.005	0.155 *	0.039
		(1.36)	(0.92)	(-0.07)	(2.56)	(0.65)
	1994	0.000	0.074	0.054	0.051	0.023
		(0.00)	(1.35)	(0.78)	(0.87)	(0.40)
	1995	0.096 *	-0.033	0.127 *	-0.006	0.001
		(1.71)	(-0.61)	(1.81)	(-0.10)	(0.02)
	1996	-0.053	-0.024	-0.094	-0.046	-0.007
		(-0.95)	(-0.43)	(-1.31)	(-0.78)	(-0.13)

Exhibit 4.10 (continued)
Regression Coefficients for Application Index Models

Explanatory Variables		Dep. Var.: Change in *ln(Applications/Expected Applications)*				
		Female	**Male**	**18 - 29**	**30 - 39**	**40 - 64**
Connecticut Dummies	1995	0.084	-0.017	0.015	-0.067	0.089
		(1.10)	(-0.22)	(0.15)	(-0.84)	(1.17)
	1996	0.091	0.045	0.142	0.137 *	0.003
		(1.20)	(0.61)	(1.40)	(1.70)	(0.04)
California Dummies	1994	-0.103 *	-0.043	-0.045	-0.076 *	-0.078 *
		(-3.56)	(-1.58)	(-1.31)	(-2.59)	(-2.63)
	1995	0.012	-0.061 *	-0.043	-0.072 *	-0.003
		(0.41)	(-2.33)	(-1.29)	(-2.49)	(-0.11)
	1996	-0.079 *	-0.045 *	-0.115 *	-0.096 *	-0.035
		(-2.86)	(-1.75)	(-3.43)	(-3.41)	(-1.27)
Florida Dummies	1995	0.029	0.006	-0.036	-0.001	0.041
		(0.74)	(0.15)	(-0.71)	(-0.03)	(1.06)
	1996	-0.035	0.020	0.027	-0.038	-0.007
		(-0.92)	(0.54)	(0.53)	(-0.90)	(-0.20)
Washington, DC Dummies	1992	-0.059	-0.031	0.218	-0.057	-0.104
		(-0.34)	(-0.18)	(1.11)	(-0.31)	(-0.56)
	1993	0.037	-0.092	-0.229	0.012	-0.019
		(0.21)	(-0.54)	(-1.15)	(0.07)	(-0.10)
	1994	-0.112	0.117	0.030	0.003	0.018
		(-0.64)	(0.67)	(0.14)	(0.02)	(0.10)
	1995	0.031	-0.067	0.077	-0.065	-0.036
		(0.17)	(-0.38)	(0.36)	(-0.34)	(-0.20)
Illinois Dummies	1992	0.037	0.100 *	0.060	0.151 *	0.021
		(0.86)	(2.42)	(1.17)	(3.35)	(0.47)
	1993	-0.049	-0.042	0.025	-0.106 *	-0.057
		(-1.18)	(-1.05)	(0.49)	(-2.42)	(-1.34)
	1994	-0.047	-0.046	-0.009	-0.033	-0.081 *
		(-1.13)	(-1.16)	(-0.17)	(-0.76)	(-1.91)
	1995	-0.086 *	-0.171 *	-0.166 *	-0.228 *	-0.055
		(-2.07)	(-4.27)	(-3.18)	(-5.17)	(-1.31)
	1996	-0.156 *	-0.215 *	-0.232 *	-0.224 *	-0.141 *
		(-3.75)	(-5.37)	(-4.40)	(-5.04)	(-3.36)
Maryland Dummies	1993	-0.018	0.057	0.060	0.113 *	-0.036
		(-0.29)	(0.96)	(0.77)	(1.78)	(-0.57)
	1994	0.024	-0.147 *	-0.145 *	-0.051	-0.055
		(0.38)	(-2.48)	(-1.85)	(-0.80)	(-0.88)
	1995	-0.041	-0.028	0.039	-0.108 *	-0.023
		(-0.67)	(-0.48)	(0.49)	(-1.72)	(-0.37)
	1996	-0.015	-0.079	-0.041	-0.013	-0.071
		(-0.24)	(-1.34)	(-0.51)	(-0.21)	(-1.16)

Exhibit 4.10 (continued)
Regression Coefficients for Application Index Models

Explanatory Variables		Dep. Var.: Change in *ln(Applications/Expected Applications)* Female	Male	18 - 29	30 - 39	40 - 64
Maine Dummies	1992	-0.076	0.142	0.044	0.047	0.027
		(-0.61)	(1.19)	(0.28)	(0.36)	(0.22)
	1993	0.106	0.151	0.116	0.144	0.130
		(0.85)	(1.27)	(0.73)	(1.09)	(1.04)
	1994	0.012	-0.032	-0.128	0.070	-0.006
		(0.10)	(-0.27)	(-0.80)	(0.53)	(-0.05)
	1995	-0.070	-0.063	0.060	-0.158	-0.071
		(-0.57)	(-0.53)	(0.37)	(-1.19)	(-0.58)
Minnesota Dummies	1992	0.012	-0.025	-0.058	-0.024	0.018
		(0.18)	(-0.39)	(-0.72)	(-0.35)	(0.26)
	1993	0.074	0.080	0.149 *	0.118 *	0.004
		(1.11)	(1.27)	(1.82)	(1.74)	(0.07)
	1994	0.008	-0.084	-0.081	-0.049	-0.011
		(0.12)	(-1.34)	(-0.97)	(-0.72)	(-0.17)
	1995	-0.033	-0.110 *	-0.056	-0.083	-0.073
		(-0.50)	(-1.76)	(-0.67)	(-1.22)	(-1.11)
	1996	-0.028	-0.040	0.084	-0.139 *	-0.037
		(-0.42)	(-0.65)	(1.01)	(-2.03)	(-0.58)
Ohio Dummies	1992	0.050	0.019	0.035	0.072	0.010
		(1.18)	(0.46)	(0.67)	(1.58)	(0.22)
	1993	-0.009	0.041	0.036	0.034	-0.015
		(-0.20)	(0.99)	(0.69)	(0.75)	(-0.34)
	1994	-0.014	-0.048	0.025	-0.046	-0.052
		(-0.34)	(-1.17)	(0.48)	(-1.01)	(-1.22)
	1995	0.026	-0.028	-0.024	-0.066	0.051
		(0.61)	(-0.68)	(-0.44)	(-1.43)	(1.19)
	1996	-0.042	-0.025	0.045	-0.040	-0.070 *
		(-0.99)	(-0.61)	(0.83)	(-0.87)	(-1.67)
Rhode Island Dummies	1993	0.110	-0.043	0.103	0.004	0.047
		(0.77)	(-0.32)	(0.61)	(0.03)	(0.32)
	1994	-0.138	0.063	0.192	-0.198	-0.089
		(-0.99)	(0.47)	(1.14)	(-1.35)	(-0.63)
	1995	0.036	0.139	-0.005	0.200	0.070
		(0.25)	(1.03)	(-0.03)	(1.35)	(0.49)
	1996	-0.004	-0.060	0.008	-0.110	-0.008
		(-0.03)	(-0.45)	(0.05)	(-0.74)	(-0.05)
Virginia Dummies	1992	-0.011	-0.036	0.005	-0.046	-0.023
		(-0.21)	(-0.68)	(0.07)	(-0.80)	(-0.41)
	1993	-0.056	-0.100 *	-0.127 *	0.011	-0.102 *
		(-1.02)	(-1.90)	(-1.92)	(0.19)	(-1.81)
	1994	-0.042	0.031	0.031	-0.021	-0.012
		(-0.78)	(0.60)	(0.47)	(-0.38)	(-0.22)
	1995	0.022	0.024	0.016	0.001	0.035
		(0.41)	(0.47)	(0.24)	(0.02)	(0.65)

Exhibit 4.10 (continued)
Regression Coefficients for Application Index Models

Explanatory Variables		Dep. Var.: Change in *ln(Applications/Expected Applications)* Female	Male	18 - 29	30 - 39	40 - 64
West Virginia Dummies	1989	0.022	0.032	0.026	0.042	0.024
		(0.21)	(0.32)	(0.21)	(0.37)	(0.23)
	1990	0.006	-0.051	0.006	-0.038	-0.023
		(0.06)	(-0.50)	(0.05)	(-0.34)	(-0.23)
	1991	0.098	0.161	0.148	0.164	0.110
		(0.95)	(1.60)	(1.14)	(1.43)	(1.07)
Year Dummies	1989	0.036 *	0.050 *	0.043 *	0.077 *	0.028 *
		(2.97)	(4.29)	(3.04)	(5.96)	(2.22)
	1990	0.127 *	0.131 *	0.148 *	0.161 *	0.107 *
		(10.39)	(11.29)	(10.27)	(12.61)	(8.53)
	1991	0.227 *	0.186 *	0.165 *	0.191 *	0.226 *
		(17.61)	(15.17)	(10.92)	(14.26)	(17.06)
	1992	0.082 *	0.050 *	0.122 *	0.094 *	0.032 *
		(6.66)	(4.23)	(8.31)	(7.25)	(2.52)
	1993	0.065 *	0.066 *	0.097 *	0.123 *	0.032 *
		(5.26)	(5.63)	(6.51)	(9.50)	(2.54)
	1994	0.002	0.000	0.018	0.017	-0.011
		(0.18)	(-0.01)	(1.14)	(1.24)	(-0.83)
	1995	-0.079 *	-0.058 *	-0.052 *	-0.032 *	-0.090 *
		(-6.09)	(-4.65)	(-3.19)	(-2.28)	(-6.81)
	1996	-0.028 *	-0.069 *	-0.035 *	-0.058 *	-0.046 *
		(-2.19)	(-5.61)	(-2.17)	(-4.18)	(-3.57)

* |t| > 1.645

the combination of business cycle effects and welfare reforms. While the coefficients are all positive for each year from 1989 to 1994, they all turn negative in 1995 and 1996. Most are significant, indicating that the business cycle and the state reforms we model leave substantial growth or decline unaccounted for.

The relative values of the male and female year dummy coefficients vary from year to year, but over all years they show an increase in female applications relative to male applications holding other things constant. The sum of the year dummy coefficients for women is 0.43, vs. 0.36 for men. Thus, after controlling for the business cycle and the reforms we have captured in the model, as well as demographics, female applications increase relative to male applications over the period.

D. Analysis of Trends in States with Early Reforms

Recall that the coefficient of a year-state dummy can be interpreted as the percent difference between actual application growth in that state and year, and the growth that is accounted for by other factors in the model. Many of the year-state dummy coefficients are statistically significant, indicating that this "residual" growth (or decline) is not just random noise. At the same time, however many are insignificant. The dummies for Michigan, California, Illinois, and Maryland have the largest number of significant coefficients relative to total coefficients. None

of the dummies for Florida, the District of Columbia, Maine, Rhode Island, or West Virginia has significant coefficients. Other states each have a small number of significant coefficients.

In what follows, we discuss individual coefficients as representing the effects of factors that are "unique" to the respective state. These factors might or might not be related to the welfare reforms identified. Examination of the signs and patterns of the coefficients across equations and years can provide clues as to the nature of the factors responsible for the residual growth, as can information from other sources. Ultimately, though, it is not possible to "prove" that the coefficients represent the effects of welfare reform, in whole or in part.

The Michigan dummy coefficients for 1991 are significant and large in all equations. They show that growth in the index from 1990 to 1991 of seven to 22 percent is accounted for by unique factors – presumably the termination of GA, plus associated outreach activities. The values for the male and female coefficients together imply that about 5,500 applications in 1991 are due to Michigan's unique factors -- in the middle of the range obtained by Bound et al., and less than the number we obtained when making comparisons of Michigan to Iowa and Wisconsin without adjusting for the business cycle.

A somewhat surprising finding is that the effect in 1991 is larger for women than for men. This finding disappears if we look over the first three years after the ending of the GA program. Adding together the 1991 and 1992 Michigan coefficients yields an estimate of the percent growth from 1990 to 1992, and so on. Thus, according to these estimates, the unique factors in Michigan increased male applications by almost 26 percent from 1990 to 1993, and increased female applications by 21 percent. These estimates imply an increasing effect for men from 1991 through 1993 and not much change for women, which is inconsistent with the Bound et al. finding of a diminishing effect.

Starting in 1994, the Michigan dummy coefficients turn negative, and most are significantly negative. If the labor market variables and annual dummies are successfully holding both business cycle effects and national policy changes constant for Michigan, these negative coefficients presumably reflect the end of the surge of applications following the termination of GA, plus effects of any other welfare reform activities in Michigan. We suggest an additional explanation in the context of our discussion of Illinois, below.

We do find evidence of the impacts of GA cuts for the states that significantly cut their GA programs in 1992, although it is much weaker. The Illinois coefficients in the male and age 30-39 equations are both positive and significant in that year while those in the other equations are also positive. The Ohio coefficients in the same year are also all positive, although not significant. Maryland, Maine, Massachusetts, and Minnesota all implemented smaller cuts in 1992. The age 30-39 coefficient is positive and significant for Maryland. All of the Maine coefficients except the female coefficient are positive, although not significant. The Massachusetts cuts were quite small, and the impact is not clear, but is perhaps worth noting that the 1993 coefficient for the age 30–39 group is positive and significant. The Minnesota coefficients are small in 1992, but those in 1993 are all positive and are significant for both the 18–29 and 30–39 age groups. The District of Columbia also cut its GA program significantly in 1992, but no clear pattern emerges in the District's coefficients for 1992.

The GA cuts in these states appear not to have a positive effect on applications after 1993, and the coefficients in later years generally turn negative, perhaps reflecting the end of the surge in applications from the GA cuts. The coefficients in Illinois are particularly large and negative in 1995 – so large that there must be an additional explanation. One possible explanation is that the DA&A legislation of 1994 and 1996 had a substantial negative impact in Illinois, which was the state with the largest number of DA&A cases per capita on the SSI and DI rolls in March 1996 (167 percent above the national average) -- just before Congress passed the law that ended benefits for those whose drug or alcohol was material to disability (Lewin, 1998). This may be evidence that the 1994 law, or anticipation of the 1996 law, had a substantial negative impact on applications. It is worth noting that Michigan had the fourth largest number of DA&A SSI recipients per capita in the same month, which may help explain the large negative coefficients observed for Michigan in the same years.

In Wisconsin, we find that the 1994 coefficients are all positive, and the one for those age 30–39 is significant. The explanation may be AFDC reforms implemented in that year or earlier, but in the following years the coefficients turn negative, despite 1995 cuts in Wisconsin's GA program. Some of the negative coefficients are both large and significant – especially for women, and especially for the youngest and oldest age group in 1996. We find this pattern difficult to interpret.

In Massachusetts, the coefficients for the female equation and the age 18–29 equation are both positive and significant in 1995. This is the year in which the State implemented its first major AFDC reform, the Transitional Aid to Families with Dependent Children program, so these results are suggestive of a positive effect on SSI applications from young women. The program was not implemented until October of 1995, however, and it seems unlikely that such a large effect would be observed so quickly.

In Connecticut, the female coefficients are positive in both 1995 and 1996, and each has a t-statistic above 1.0, but neither is significant on its own. The male equation coefficients are closer to zero (one is negative), so this finding is at least consistent with a positive effect of Connecticut's AFDC reforms (A Fair Chance, implemented in November 1994, and Reach for Jobs First, implemented in January 1996) on SSI applications from women. The coefficients for the two youngest age groups are large and positive in 1996, and the one for the age 30–39 equation is significant, again consistent with a positive effect of reform.

The coefficients in California for all three years (1994–1996) are almost all negative and many are statistically significant. There is no obvious evidence of an impact of California's AFDC reforms. The SSA DA&A reforms may play a role here. Like Illinois and Michigan, the number of DA&A cases per capita was much higher than the national average before the 1996 DA&A legislation was passed (Lewin, 1998).

E. Summary

In summary:

- The labor market variables and the dummies included to capture the effects of state reforms leave much of the annual growth in the early period unaccounted for, as well as much of the

decline at the end of the period. This suggests that national factors played a very significant role, including SSA reforms.

- The analysis finds effects of termination of Michigan's GA programs that are roughly similar to those found in previous analyses. We also find some evidence that more modest GA cuts in other states increased applications, but this evidence is not very strong in any individual state. While the evidence provides qualitative support for the view that GA cuts during the period had a substantial impact on SSI applications, it does not provide very satisfactory information about the quantitative effects, especially at the state level.

- We find what might be termed glimmers of evidence about positive impacts of early AFDC reforms on applications from women and from those in younger age groups in Massachusetts and Connecticut, but not elsewhere.

- Applications in a few states that had exceptionally high SSI and DI DA&A caseloads per capita before passage of the 1996 DA&A legislation declined by significantly more in 1995 and 1996 than can be explained by the labor market variables and the average effect of national policy changes or other factors. One explanation might be that the 1994 and 1996 DA&A legislation may have substantially deterred applications in these states.

Despite our attempt to capture labor market effects, it might be that the estimates still miss a substantial share of the impact of the recession on applications. If so, then the estimates misleadingly leave much of the growth and decline in applications over the period to be explained by other factors, and the coefficients on some of the state-year dummy variables might be biased. This might, for example, reduce the estimate of the effect of GA cuts in Michigan, and reduce the negative coefficients on the state-year dummies in the states that had exceptionally high DA&A caseloads.

An important reason for concern is the accuracy of state labor market data. Measurement errors generally result in estimates of effects of true variables that are biased downward in magnitude. This is exacerbated when changes in variables are analyzed because measurement errors are a relatively more important source of variation than variation in levels.

Even if the employment statistics contain no measurement errors, the labor market variables might still fall short of capturing the full effects of business cycles because the relationship between the business cycle and applications may vary considerable across states. Such variation could be due to variation in the nature of the economy, population characteristics, public policies, and perhaps to other factors.

V. CONCLUSION

Adult SSI disability application rates grew rapidly in all states from 1988 to 1993, and had substantially declined in most by 1997. This pattern of growth applies to both sexes and all age groups. The most important causes of this pattern appear to be: the recession of 1991 and the subsequent sustained recovery; cuts in state general assistance programs and other state policy changes; and a variety of administrative changes to SSI. The aging of the baby boom cohort also contributed to application growth during this period.

Application rates for women increased relative to those for men over this period, even after adjusting for the aging of the baby boom cohort and the fact that women have historically applied at lower rates than men when young, and higher rates when older. We found no credible evidence that these changes were caused by pre-PRWORA AFDC reforms. It seems likely, however, that growth in applications during this period represents shifts in program participation from AFDC to SSI that were caused by other factors, especially among women and especially among the youngest and middle age groups. Administrative changes in the SSI program may be an important reason for this shift.

The comparison of trends in selected states and the pooled time-series analysis show that the effects of major state reforms, such as the termination of Michigan's GA program, are clearly evident in such comparisons, but effects of smaller GA cuts in other states are much more difficult to detect. Further, even when an impact is evident, the estimated size of that impact may vary substantially, depending on a wide variety of assumptions that, inevitably, are quite arbitrary.

We found some evidence to suggest that the DA&A reforms reduced applications in states that had very high SSI and DI DA&A caseloads before the 1996 DA&A legislation, but it would be premature to draw this conclusion. We are particularly concerned that difficulties in capturing the full effects of the business cycle on applications may result in overstatement of the importance of SSA policy on applications during this period.

We conclude that analysis of annual state-level trends in all SSI applications is not likely to yield accurate estimates of the effects of non-SSA welfare reforms on SSI applications. We reach this conclusion primarily because of the findings concerning the effects of GA reforms, but also because of our concerns about how well the approach can capture labor market effects. Significant improvements might be achieved from analysis of applications by age and sex, and by use of quarterly data. Measures of poverty and some of its proximate causes, such as the number of female-headed households, might also add significantly to the explanatory powers of these models, but state-level measures of these variables are highly contaminated with measurement error.

We think it would be a mistake for SSA to rely on pooled time-series analysis of state applications and other program outcomes as the primary approach to evaluating the impacts of the reforms. We recommend, instead, that SSA compare within state trends in outcomes for groups targeted by the reforms to those groups not targeted to obtain first-cut estimates for each state. Pooled time-series analysis could be pursued to refine these estimates, and to assess their relationship to specific state reforms. We develop an evaluation option that uses this approach in Chapter 6.

At the beginning of ***Section II***, we posed the following question: Is it reasonable to think that the application experience in the pre-1996 period would have been replicated after 1996 in the absence of the reforms legislated in 1996 and 1997? The answer is clearly no. There were many factors, including the economy and national and state program changes, that influenced applications during this period, and there is no reason to think that such changes would have been replicated after this period in the absence of the legislation. It is unfortunate that we do not have a more complete understanding of the influence of the various factors. Our limited

understanding makes it problematic to use this period as a base against which to measure the impact of reform. While further pooled time series analyses might significantly improve our understanding of SSI application growth in this period, it seems unlikely that this methodology alone would be able to raise our level of knowledge about this period sufficiently for our purposes – the evaluation of the recent SSA and non-SSA reforms.

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CHAPTER 5
ANALYSIS OF MATCHED SIPP/SSA DATA

I. INTRODUCTION

In this chapter, we present descriptive and econometric analyses of the pre-reform period using the SIPP/SSA matched data. The primary objective is to build the foundation for a design option that uses these data, plus future SIPP panels, to evaluate the impacts of welfare reforms on SSI. Specifically, we:

- Provide an overview of the matched files for the 1990, 1991, 1992, and 1993 SIPP panels and discuss data issues of importance to the evaluation options;
- Present descriptive statistics for SIPP respondents who were SSI recipients or AFDC recipients when first interviewed. The statistics presented are quite extensive, and because they are likely to be of general interest we present much more information than is directly pertinent to evaluation options for this project. The discussion of the statistics is, however, focused on information of direct relevance to this project;
- Present descriptive statistics of individuals who applied for SSI in the five years following their first SIPP interview ("post-SIPP" applicants). These SSI applicants are of substantial interest because they represent the large number of persons who applied in the period from 1990 to 1996. Among other things, we can directly observe transitions from AFDC to SSI during this period. We also present statistics for those who are first awarded SSI benefits after they are initially observed in SIPP (post-SIPP recipients). Again we present many statistics that are likely to be of general interest, but confine the discussion to information of direct relevance to this project;
- Assess potential "target" and "comparison" groups that might be used in an evaluation option; and
- Estimate probabilities (hazard) models for SSI applications and allowances from 1990 to 1996.

As discussed in the previous chapter, it appears that a substantial number of adults, especially young women, may have shifted from participation in AFDC to participation in SSI since 1988. There is also substantial evidence of such shifting among children (Garrett and Glied, 1998). The matched data allow us to examine this directly. More generally, we can assess the extent to which the populations served by AFDC and SSI "intersect" with one another - have similar characteristics, participate in both programs at different times, and live in families that participate in both programs - for both adults and children. It is this intersection that creates the potential for interactions between the programs. We can also obtain a sense of how the intersection has changed since 1990, by following those who applied for SSI since observed in SIPP.

The detailed descriptive statistics on demographic, health, and program characteristics of SSI and AFDC recipients at the start of each SIPP panel provide general information about these two caseloads during the period 1990–1993, and also tell us the extent to which the two populations intersected at that time. We then present the characteristics of "post-SIPP" SSI applicants and recipients, which we define as SIPP respondents who became applicants and recipients in the

five years following their first SIPP interview. We assess differences between these applicants or recipients and those who were SSI recipients when first interviewed, especially with respect to their prior AFDC status. We then conclude the descriptive analysis with an assessment of characteristics of several demographic and income groups that could be used as target or control groups in a future analysis.

The econometric analysis serves three purposes:

- To assess the feasibility of estimating econometric models for specific groups of interest during the pre-reform period, as well as in a design option;[63]
- To generate baseline models of SSI applications and allowances during the pre-reform period; and
- To further explore identification of target and comparison groups, including development of a probabilistic methodology.

The main feasibility issue is sample sizes for the groups of most interest to a future evaluation: young women (age 18 to 40) and children in low-income families. While the sample sizes for both are very large in SIPP, only a very small number apply for SSI after they are observed, and an even smaller number obtain allowances. It is not clear *a priori* whether these sample sizes are sufficient to produce reasonably precise parameter estimates. Because the number of applicants from each group of interest is so small for each individual SIPP,[64] we pool data from the 1990 through 1993 SIPP panels to estimate the models presented here.

A second important issue is the feasibility of estimating the effects of state-level factors. A potentially important advantage of the SIPP/SSA analysis, over the pooled state-level analysis presented in Chapter I, is that both individual and state-level factors can be included in the econometric models, not just state-level factors. State-level factors are very important to a future evaluation because of the state-specific nature of reforms under TANF. Small applicant samples from each state in the SIPP may, however, preclude accurate estimation of the effects of state-level factors, even when samples from multiple SIPP panels are pooled.

We present a series of application and allowance models for young women, young men, and children from low-income families during the pre-reform period.[65] We model the "hazard rate" for first applications and first allowances in the period after a respondent is first observed in SIPP and before the passage of PRWORA (in August 1996). The application hazard rate is the probability that a respondent applies for SSI in a given period conditional on not having applied in an earlier period. The allowance hazard is defined analogously. In all models, factors that affect a respondent's hazard rate include: characteristics of the individual when first observed in SIPP, state-level factors (e.g., the unemployment rate), duration of time since the respondent was

[63] We define the pre-reform period as the time between the first SIPP interview and July 1996 (the month prior to the passage of PRWORA). Hence, because we are using multiple SIPP panels, the starting point for the pre-reform period varies by the starting point of each SIPP panel.

[64] Of the four SIPP panels, the 1990 panel includes the most post-SIPP applicants in the five years after the first interview: just 194 young women and 294 children. See ***Appendix Exhibit E.8***.

[65] An outline of these models was presented in Lewin (1998a) for SSI applications.

observed in SIPP (as long as 6.5 years, for 1990 SIPP respondents), and the year in which the respondent is first observed in SIPP.

We also experiment with models in which the year of application or allowance interacts with variables that identify individuals whose applications and allowances are more likely than others to be affected by factors that also affect AFDC participation, including AFDC reforms. These models allow us to assess whether there were shifts in the hazards for such individuals during the pre-reform period relative to hazards for others – a phenomenon that is suggested by the analysis in the two previous chapters.

In interpreting the findings, it should be kept in mind that they are for first applications or allowances only. Significant shares of all applications in any year are from individuals who have previously applied, and significant shares of SSI recipients have multiple participation spells. SIPP respondents who first applied for (received) SSI benefits before they were observed in SIPP are not included in the samples for the first application (first allowance) models.

II. DESCRIPTION OF MATCHED DATA FILES

A. SIPP Data Description

For our descriptive analysis, as well as our econometric analysis that appears in the next section, we use data from the 1990, 1991, 1992, and 1993 SIPP panels. These data represent the most recent completed SIPP panels available. In general, each of these panels includes longitudinal information on households, families, and individuals over a 32-month period.[66] In ***Exhibit 5.1***, we summarize sample sizes and interview dates for each of the SIPP panels used in this report.

Exhibit 5.1
Summary of the 1990-1993 SIPP Panels

Panel	First Interview	Last Interview	Number of Waves	Eligible Households[67]	Original Sample Members[68]
1990	Feb. 90	Sept. 92	8	23,627	61,900
1991	Feb. 91	Sept. 93	8	15,626	40,800
1992	Feb. 92	May 95	10	21,577	56,300
1993	Feb. 93	Jan. 96	9	21,823	56,800

Source: U.S. Bureau of the Census (1998) "Survey of Income and Program Participation Quality Profile" Third Edition (http://www.sipp.census.gov/sipp/qprofile.htm)

[66] The 1992 and 1993 SIPP panels include longitudinal information over a 40 and 36 month period, respectively.
[67] Eligible households are households sampled for wave 1, including both responding and nonresponding households.
[68] Number includes an estimate of the persons in wave 1 noninterviewed households.

Each SIPP panel contains detailed monthly demographic, program, employment, and health characteristics of a nationally representative sample. The sample includes individuals in the non-institutionalized resident population living in the United States.[69] To facilitate the process of collecting data, SIPP panel samples are divided into four random subsamples called "rotation groups." Each rotation group is interviewed separately about their activity over the previous four-month period. Together, the four rotation groups comprise one interview "wave."

During each SIPP interview, "core" and "topical module" questions are asked of adults age 15 and older. Information on children in the household is also gathered during the interviews of adults. The core questions include demographic, program participation, and employment information over the previous four-month period. These questions are repeated during each wave of interviews. The number of interviews in each SIPP panel varies, but since 1990 each panel had at least eight waves of interviews.

SIPP topical modules are implemented at various points in each panel. In general, the topical modules vary by each interview wave, though some topical module questions are repeated in various waves of each panel. We use the following three topical module files from each SIPP panel: Assets and Liabilities, Recipiency History, Functional Limitations, and Disability. We use the Assets and Liabilities topical module to obtain information on household wealth. We use the Recipiency History topical module to obtain information on past participation in AFDC and Food Stamps. Finally, we use the Functional Limitations and Disability topical module to construct various measures of disability and health status. A summary of the variables used from the Functional Limitations and Disability topical modules appears in ***Exhibit 5.2***. The measures we construct are similar to those used by McNeil (1993), Kruse (1997), Lahiri, Vaughan, and Wixon (1995), and Hu, Lahiri, Vaughan, and Wixon (1997).

B. Matched SSA Records[70]

SSA created restricted research files by matching SSA records with the 1990, 1991, 1992, and 1993 SIPP panels. The individuals included in the SSA files were selected based on their participation in one of the SIPP panels.[71] Individuals were matched using Social Security Numbers (SSNs). The Census collects information on SSNs during their SIPP interviews. As part of the ongoing SIPP program, the Bureau of the Census and SSA validate SSNs for SIPP sample members in the course of normal survey operations. An attempt is also made to locate SSNs for persons for whom an SSN is not reported in the survey (except for persons refusing to provide their SSN). According to Lahiri, Vaughan, and Wixon (1995), in the 1990 panel, this process resulted in a "validated" SSN for approximately 90 percent of original sample members age 18 or older and for about 80 percent of persons under the age of 18.

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[69] The population for the SIPP interviews includes persons living in group quarters, such as dormitories, rooming houses, and religious group dwellings. Persons excluded from the SIPP population include crew members of merchant vessels, Armed Forces personnel living in military barracks, institutionalized persons, such as correctional facility inmates, residents of long-term care facilities, and citizens residing abroad. Foreign visitors who work or attend school in this country and their families are eligible for interviews.

[70] The matched file description is based on an SSA Memorandum from Howard Oberheu to Dennis Vaughan on September 8, 1997.

[71] Matched files also exist for the 1984 SIPP panel.

Exhibit 5.2
Functional Limitations and Disability Topical Module Variables

Variable	Response Options
General	
General Health Status	Poor, Fair, Good, Very Good, or Excellent
Required use of cane, crutches, walker or wheel chair	Yes or No
Functional Limitation	
Seeing words or letters	Reported Difficulty (Yes or No)?
Hearing normal conversations	Reported Difficulty (Yes or No)?
Having speech understood	Reported Difficulty (Yes or No)?
Lifting and carrying 10 lbs.	Reported Difficulty (Yes or No)?
Climbing stairs without resting	Reported Difficulty (Yes or No)?
Walking three city blocks	Reported Difficulty (Yes or No)?
Activities of Daily Living	
Getting around inside the house	Reported Difficulty (Yes or No)?
Getting in or out of a bed or a chair	Reported Difficulty (Yes or No)?
Taking a bath or shower	Reported Difficulty (Yes or No)?
Dressing	Reported Difficulty (Yes or No)?
Eating	Reported Difficulty (Yes or No)?
Using the toilet, including getting to the toilet	Reported Difficulty (Yes or No)?
Variable	**Response Options**
Instrumental Activities of Daily Living (IADLs)	
Going outside the home	Reported Difficulty (Yes or No)?
Instrumental Activities of Daily Living (IADLs) (cont'd.)	
Keeping track of money and bills	Reported Difficulty (Yes or No)?
Doing light housework	Reported Difficulty (Yes or No)?
Using the telephone	Reported Difficulty (Yes or No)?
Severe Functional Limitations, ADL, or IADL	
Severe Limitation	Respondent reported that s/he was unable or required person assistance to perform a specific Functional Limitation, ADL, or IADL.
Work or Housework Disability	
Presence of a limitation in the kind or amount of work s/he can do	Reported Limitation (Yes or No)?
Presence of a limitation in the kind or amount of housework s/he can do	Reported Limitation (Yes or No)?

We use the SSA files that were extracted from the Supplemental Security Record (SSR). The SSR contains detailed program information on SSI applicants and recipients, as well as ineligible family members whose incomes may be deemed available for support of the applicant or recipient. Variables include SSNs, residence, sex, race, birth date, death date, application date, payment status, wage income amount, and sample selection date. All of the core information on SSI applicants (e.g., race, sex, birth date), as well as some records that may change over time (e.g., application date for persons who filed multiple times), was taken from the earliest record on file. Information from the most recent SSR files, however, was used to construct current payment variables. The current payment variables, which include information on the individual's monthly eligibility status and payment amounts, are available on the matched files from 1974 (the first year of SSI) to 1998.

C. Advantages and Limitations

The primary advantage of the matched SIPP/SSA data is that it provides detailed descriptive information on a nationally representative sample of individuals who applied for SSI or became an SSI recipient between 1974 and 1998. These data can be used to observe detailed transitions of SIPP respondents before, during, and after their SIPP interviews. While transitions to SSI can be observed using SSA administrative data alone, the combination of survey and administrative data allows for the construction of detailed characteristics on SSI applicants and recipients, such as family, health, labor market, and other program information (e.g., AFDC and Food Stamps).

There are, however, important limitations to these data. First, detailed characteristics from SIPP interviews are only available over the life of the panel. For example, if we use data from the 1990 SIPP/SSA panel match, even though we can identify SSI transitions from 1974 to 1998, we can only identify information on employment and other program participation over the life of the panel (1990 to 1992). Attempts to characterize 1998 SSI recipients using information from, say, the 1990 panel, may be problematic because some characteristics, such as health, income, and family status will likely change as a person ages. In the future, this problem may be mitigated for the 1992 and 1993 SIPP/SSA matches when the *Survey of Program Dynamics* (SPD) is released. The SPD uses a sample from the 1992 and 1993 SIPP panels and follows them for the six years from 1996 to 2001. In theory, the SPD could be linked with the already existing 1992 and 1993 SIPP/SSA matches to create a ten-year database with both panel and administrative information. We discuss the SPD further in Chapter 6.

A second limitation of the SIPP/SSA data is that there is significant attrition bias in later interviews of SIPP panels.[72] In our descriptive analysis, we track the level of attrition by SSI and AFDC recipients. Although we do not report the results in the body of our report, the effect of attrition is evident in the descriptive statistics because distributions for variables collected after the first interview have "missing" cells (see ***Appendix Exhibits E.1 – E.7*** for more details),. To minimize attrition bias, we report information only from the first wave of each panel unless the information is not collected in that wave. For instance, we report income statistics for the first month of the respondent's panel rather than the first year. First-year income data appears in the appendix tables for those who continued responding for at least one year. We found no

[72] This issue was raised during our last Technical Support Group meeting.

noteworthy differences between the distribution of first-month income and the distribution of mean monthly income for the year.

A limitation of the data set available for this analysis, but which could be corrected, is that the current matched file only contains data for first applications. Many applications are repeat applications, and while some are essentially continuations of earlier applications, many are not. We discuss this issue further in Chapter 6. A detailed discussion appears in Pickett and Scott (1996). A second limitation that can also be remedied is that most observations had missing data for the administrative impairment codes.

D. Sample for Descriptive Analyses

The sample for all of our analyses includes individuals who were respondents in the first wave of the 1990, 1991, 1992, or 1993 SIPP interview. All of the individuals in our sample provided "core" information on their activities in January of each panel year.[73] We create four cross-sectional samples for individuals in January 1990, January 1991, January 1992, and January 1993.

The matched SSA records are used to identify SSI applicants and recipients in each panel. We identify SSI applicants based on date of first application. We only use information from individuals whose master file type was "disabled individual," disabled spouse," or "disabled child." Information regarding "ineligible spouses, fathers, mothers, and/or essential persons" is also included in the file for deeming purposes.[74] Because individuals in the "ineligible" group are not applying for benefits, we do not count them as applicants. In a small number of cases where the application date is missing, we use the record establishment date as the date of first application.

We identify SSI recipients based on monthly payment status. If the monthly payment status variable indicates that the individual was in "current pay" status for that month, we include them as an SSI recipient. SSA declares an individual who meets all the medical and non-medical criteria of the SSI program as being in "current pay" status for that program. SSA retroactively recoded pay status variables as if they were receiving benefits when they were determined SSI eligible. For example, if SSA determined that an individual qualified for SSI for benefits in January 1991, but the individual did not start receiving benefits until December 1991, the current payment status variable will be coded as if the person was receiving payments starting in January 1991. For SSI recipients, we also report program statistics on Federal SSI amounts and State SSI supplements.[75]

In the remainder of this report, the only variables we use from the matched SSA files are date of SSI application, SSI payment status, and SSI payments. The self-reported data from the SIPP are used to identify the remaining demographic, income, health, and non-SSA program (e.g., AFDC and Food Stamps) variables. Some variables in our analysis are only available for those who

[73] Because each rotation group within each panel is interviewed separately about their activity over the previous four-month period, the only month in which all individuals in the first wave provide information is January.

[74] The majority of "ineligible" persons on the SSA files were parents of child SSI applicants.

[75] All SSI recipients in "current pay" status received some income from Federal and/or State SSI payments. The impairment codes were missing for the majority of adult (age 18 to 40) SSI recipients and a large portion of child (age 0 to 17) SSI recipients.

complete interviews at later dates (e.g., topical module information on disability measures). Hence, people who leave the panel through attrition or death will have missing information for these variables. We create separate categories to identify individuals with missing information.

III. CHARACTERISTICS OF SSI AND AFDC RECIPIENTS, 1990 - 1993

A. Overview

In this section we present descriptive statistics for SIPP respondents who were identified as either SSI recipients or AFDC recipients in January of the year in which they were first interviewed. SSI status is based on administrative records and AFDC status is based on self-reports.[76] As mentioned in the introduction, we present many statistics that are of general interest, but focus the discussion on the information that is of direct relevance to the objectives of this project.

All of the statistics presented in this section are based on the combined panels, and are means of annual population estimates obtained from the four separate panels.[77] Individual year estimates are presented in ***Appendix E***, were computed using SIPP sample weights and, to the best of our knowledge, represent unbiased estimates of the characteristics of the populations in these program groups in the respective years. The means reported here can be viewed as unbiased estimates of the simple means of the population characteristics over the four-year period. We report a few statistically significant changes in the characteristics over the four-year period in the text.

We discuss the statistics for adults (age 18–64) first. The lengthy exhibit for adult characteristics immediately follows this discussion. (We then discuss the statistics for children, which is followed by the exhibit for children.)

B. Adults

We present descriptive statistics for five adult groups (***Exhibit 5.3)***:

- Young female SSI recipients (age 18 to 40);
- Young male SSI recipients (age 18 to 40);
- Older female SSI recipients (age 41 to 64);
- Older male SSI recipients (age 41 to 64); and
- Young female AFDC recipients (age 18 to 40).

[76] Any person in a family unit that receives an AFDC payment is considered an AFDC recipient unless he or she is an SSI recipient. The SIPP does not clearly identify the "family unit" that coincides with the AFDC program definition.

[77] We used the SIPP weights for the first wave in producing the estimates for each year. The four-year means reported are the same means we would get by pooling the data and using the same weights divided by four.

We only generate statistics for young female AFDC recipients because the vast majority of adult AFDC recipients are young women. While we provide a summary of the characteristics for each of the SSI groups, we focus on young women because it is clear from the statistics that the intersection between the populations served by SSI and AFDC is far more significant for this group than for others. We begin by comparing the characteristics of the four SSI recipient groups, focusing on the differences between the characteristics of the young women and those of the other groups. This includes an examination of past AFDC participation and current participation of other family members. We then compare young female SSI recipients to their counterparts who are receiving AFDC, focusing on the extent to which the latter are potential SSI applicants or recipients. The comparison also examines the AFDC recipients' SSI application and participation histories.

1. SSI Recipient Characteristics

Statistics for adult SSI recipient groups appear in the first four columns of ***Exhibit 5.3***. We find that young female SSI recipients had several characteristics that were similar to those of other adult SSI recipients. First, not surprisingly, approximately 80 percent reported some type of disability and just over 70 percent reported a severe disability.[78] The majority of recipient groups lived with at least one other adult in the family or household, and few had any personal earnings. Further, at least 57 percent of adult SSI recipients in each group lived in families whose monthly incomes were below 150 percent of the poverty line, though young men and women were less likely to be living below the poverty line than their older counterparts.[79] This difference across age groups may be partially explained by the fact that young female SSI recipients were more likely to be living in a family with another adult than were older recipients. We find very similar distributions for personal income across all age groups. Over 60 percent of recipients in each groups had less than $500 in monthly personal income, and over 90 percent in each group had personal incomes less than $1,000.

Three characteristics clearly distinguish young female SSI recipients from other adult SSI recipients. First, they are 2.5 times more likely to have a child of their own living with them than any other group of adult SSI recipients (35.7 percent vs. 9.4, 8.5, and 13.6 percent for young men, older women, and older men, respectively). Second, they are two times more likely than any other group to be a past or present AFDC recipient (24.6 percent were past AFDC participants vs. 4.5, 10.1, and 5.0 percent for young men, older women, and older men, respectively).[80] The large difference in past AFDC participation for younger and older women may reflect more frequent transitions of young women from AFDC to SSI in recent years or a decline with age in the percent of female applicants who are former AFDC recipients. Third, young female recipients were much more likely than others to live in a family that received an

[78] The measures of disability we use include individuals who: reported a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or activity of daily living; uses a wheelchair; has used a cane, crutches, or walker for more than six months; or has a disabling mental or emotional condition. We count a person as having a severe disability if they used a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

[79] This result does not change appreciably when annual income is used.

[80] The percentages are actually slightly higher because our sample includes some cases with missing values.

AFDC payment in the same month (20.6 percent vs. 4.3, 7.4 and 4.4 percent for young men, older women, and older men, respectively).

2. Comparison of SSI and AFDC Recipients

To assess the number of adult AFDC recipients who could potentially qualify for SSI, we compare characteristics of young female AFDC recipients (fifth column of ***Exhibit 5.3***) to those of young female SSI recipients (first column). The two most obvious characteristics to compare are disability and income status.[81] We find that over 20 percent of AFDC recipients had a disability (over 15 percent reported a severe disability) and approximately 80 percent of AFDC recipients lived in a family whose income was below the federal poverty line (***Exhibit 5.3***, column 5). Hence, it is possible that a significant portion of AFDC recipients in the 1990 to 1993 cohort could have satisfied the SSI eligibility requirements based on their reported disability, health, and income characteristics. The percent with disabilities may understate the potential number of people who might be eligible for SSI, or at least apply, because some may have failed to identify their disability. Note that only 80 percent of young female SSI recipients reported a disability or health problem of any kind, even though all of these recipients presumably had one. Identifying potential SSI recipients from SIPP is, unfortunately, very problematic because the health and income information in SIPP is very incomplete relative to the information necessary to assess medical eligibility for SSI.

One major difference between the AFDC and SSI recipients is that SSI recipients were more likely to be living in a family with another adult (72.1 vs. 48.3 percent). This difference, along with the fact that SSI benefits are more generous than AFDC benefits, explains why SSI recipients were more likely than AFDC recipients to be living in a family above poverty (63.9 percent vs. 19.7 percent).[82]

3. Transitions from AFDC to SSI

A key feature of the matched data for this project is that they allow us to follow the SSI application and recipient histories of the AFDC recipient group over the years before and after SIPP. We find that 9.2 percent of all AFDC recipients in the young female sample filed a first SSI application in the period since 1990, with the largest number applying in the 1992 to 1993 period. Another 5.7 percent had filed a first application for SSI prior to 1990. Not surprisingly, the percent actually receiving an SSI benefit in each two-year period also increased substantially after 1990. From 1988-89 to 1996-97, the percent who received a payment in the two-year period more than tripled, from 2.3 to 7.5 percent. The trends from the pooled data understate the extent of the transitions since 1990 for those who were in the 1990 AFDC caseload because the

[81] A cleaner estimate of potential SSI recipients could be derived by selecting samples of AFDC recipients who had a disability and income below certain thresholds.

[82] The percents are based on January incomes. SSI benefits are more generous both because the maximum SSI benefit is generally higher than the corresponding benefit for an AFDC family member, and because the deeming rules for income of other family members are less restrictive.

Exhibit 5.3
Mean Characteristics of 1990-1993 Adult SSI and AFDC Recipients[83]

	Age 18 to 40		Age 41 to 64		18 to 40
CHARACTERISTICS	**SSI Women**	**SSI Men**	**SSI Women**	**SSI Men**	**AFDC Women**
Total					
Mean Annual Sample Size	88	91	154	79	588
Population Size Estimate	470.3	552.3	748.3	453.5	2940.3
Attrition[84]					
% not completing 1 year of SIPP	13.6	19.6	9.1	11.4	16.4
% not completing full SIPP panel	23.1	31.0	15.3	20.9	33.4
Age					
18-24	24.3	27.0	NA	NA	32.9
25-29	21.6	24.8	NA	NA	25.2
30-34	25.5	26.2	NA	NA	24.6
35-40	28.5	22.0	NA	NA	17.4
41-46	NA	NA	21.3	26.1	NA
47-52	NA	NA	18.9	21.1	NA
53-59	NA	NA	33.9	30.9	NA
60-64	NA	NA	25.8	21.9	NA
Marital Status					
Married	13.3	12.0	18.6	35.2	15.7
Never Married	62.8	80.2	19.8	35.3	49.5
Divorced/Separated/Widowed	23.9	7.8	61.5	29.7	34.7
Race/Ethnicity					
Hispanic	8.8	13.3	12.7	14.9	18.8
Black (excluding Hispanic)	28.9	26.3	28.0	35.0	35.9
White	59.9	56.9	56.0	44.9	41.1
Other	2.6	3.5	3.3	5.2	4.2
Education Attained[85]					
0-11 years	48.1	50.1	65.9	69.8	46.0
12 years	38.1	37.1	23.2	20.5	38.3
13-15 years	11.1	10.3	7.9	6.6	14.3
16 or more years	2.7	2.6	3.1	3.2	1.4
Household Size[86]					
1 person	10.7	15.2	35.6	27.9	0.1
2 persons	24.8	16.7	29.4	32.2	14.7
3-4 persons	43.5	45.5	22.8	26.1	50.3
5 persons or more	20.9	22.6	12.1	13.9	35.0

[83] Includes individuals who were interviewed in first wave of the 1990, 1991, 1992, or 1993 SIPP panels. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment. Our SSI sample includes individuals who were recipients according to SSA records in January of the calendar year. Our AFDC sample includes individuals who lived in families that received an AFDC payment during January of that year. First wave weights were used to produce population mean estimates for each year. Values reported are unweighted means of the annual estimates.

[84] Excludes individuals who died during the panel period.

[85] Includes the number of education years completed. Persons who receive a high school equivalency are included in the 12 years category.

[86] Based on household size at first interview.

Exhibit 5.3 (continued)
Mean Characteristics of 1990-1993 Adult SSI and AFDC Recipients[87]

	Age 18 to 40		Age 41 to 64		18 to 40
CHARACTERISTICS	**SSI Women**	**SSI Men**	**SSI Women**	**SSI Men**	**AFDC Women**
Family Size[88]					
1 person	16.9	21.7	38.8	35.7	0.8
2 persons	24.1	15.1	29.3	28.7	16.4
3-4 persons	39.3	43.9	20.5	22.1	50.2
5 persons or more	19.8	19.2	11.4	13.7	32.7
Children and Adults in the Household and Family[89]					
% w/at least one child in household	49.8	33.4	23.3	26.1	99.2
% w/at least one child in the family	48.0	31.0	22.8	24.3	98.6
% w/at least one adult in the household (other than the respondent)	72.1	84.6	58.3	70.8	48.3
% w/at least one adult in the family (other than the respondent)	64.1	78.0	54.6	62.9	42.1
Own Children[90]					
Percent with Own Children	35.7	9.4	8.5	13.6	96.9
Age of Youngest Child					
• None	64.3	90.6	91.5	86.4	3.1
• 0-2	9.5	3.8	0.3	0.6	46.8
• 3-5	6.7	1.7	0.6	1.3	23.1
• 6-12	12.8	3.3	2.9	5.0	22.4
• 13-17	6.8	0.7	4.7	6.8	4.6
Monthly Family Income for January (in 1993 dollars)[91]					
Less than $500	19.5	17.8	34.8	26.3	37.7
$500-$999	32.9	24.6	33.2	37.6	36.5
$1,000-$1,499	15.5	14.7	13.3	17.9	9.9
$1,500-$1,999	11.0	9.6	6.9	5.2	4.5
$2,000 or more	21.2	33.1	11.8	13.0	11.4
Mean	$1,551	$1,926	$1,096	$1,139	$1,013
Family Income as % of Poverty for January[92]					
Less than 1.00	46.1	35.6	60.2	49.8	80.3
1.00-1.49	23.4	21.7	20.0	29.1	8.8
1.50-2.00	8.7	11.8	8.5	9.9	4.3
2.00-2.99	10.2	15.5	6.8	7.3	3.9
3.00 or more	11.6	15.5	4.3	3.9	2.7

[87] Includes individuals who were interviewed in first wave of the 1990, 1991, 1992, or 1993 SIPP panels. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment. Our SSI sample includes individuals who were recipients according to SSA records in January of the calendar year. Our AFDC sample includes individuals who lived in families that received an AFDC payment during January of that year

[88] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[89] Children include individuals under age 18.

[90] Includes only those with children under 18 who are living in the family at the time of the SIPP interview.

[91] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[92] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

Exhibit 5.3 (continued)
Mean Characteristics of 1990-1993 Adult SSI and AFDC Recipients[93]

	Age 18 to 40		Age 41 to 64		18 to 40
CHARACTERISTICS	**SSI Women**	**SSI Men**	**SSI Women**	**SSI Men**	**AFDC Women**
Monthly Personal Income for January (in 1993 dollars)[94]					
Less than $500	60.6	66.5	66.9	65.3	56.8
$500-$999	33.2	27.1	29.2	29.4	37.1
$1,000-$1,499	4.7	4.4	2.8	2.8	4.9
$1,500-$1,999	1.4	1.1	0.4	1.4	0.6
$2,000 or more	0.0	1.0	0.7	1.3	0.6
Mean	$495	$502	$496	$543	$504
January Labor Earnings					
% with own labor earnings	7.5	16.6	3.4	4.7	10.1
% living in a family with earnings[95]	36.2	45.9	21.7	24.0	26.1
Household Assets (in 1993 dollars)[96]					
Missing	12.2	18.9	10.5	19.0	14.1
$0-$1,999	43.3	35.3	47.4	38.4	59.4
$2,000-$9,999	12.8	10.4	11.0	10.6	13.6
$10,000-$24,999	6.7	8.7	9.5	8.9	5.0
$25,000 or more	25.0	26.8	21.4	23.1	7.9
Mean	$37,233	$38,806	$25,240	$29,171	$10,008
Program Participation[97]					
AFDC	20.6	4.3	7.4	4.4	100.0
SSI	100.0	100.0	100.0	100.0	3.3
Food Stamps	41.2	29.3	50.4	40.5	91.1
Past Program Participation of Family[98]					
Missing	3.0	4.6	3.0	4.4	2.9
Past AFDC Recipient	24.6	4.5	10.1	5.0	100.0
Past Food Stamps Recipient	47.2	29.6	57.5	43.6	93.1

[93] Includes individuals who were interviewed in first wave of the 1990, 1991, 1992, or 1993 SIPP panels. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment. Our SSI sample includes individuals who were recipients according to SSA records in January of the calendar year. Our AFDC sample includes individuals who lived in families that received an AFDC payment during January of that year

[94] Based on monthly income for January.

[95] Includes earnings from the SSI or AFDC recipient.

[96] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Assets are adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[97] AFDC and Food Stamp participation is based on family-level participation. SSI participation is based on individual-level participation.

[98] Individual received benefit in some period prior to January of year indicated.

Exhibit 5.3 (continued)
Mean Characteristics of 1990-1993 Adult SSI and AFDC Recipients

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		18 to 40
	SSI Women	SSI Men	SSI Women	SSI Men	AFDC Women
SSI Recipiency In Other Years[99]					
Never a Recipient	0.0	0.0	0.0	0.0	91.7
Pre-1984	39.9	37.0	37.4	40.6	0.9
1984-1985	48.7	46.9	47.6	45.1	1.1
1986-1987	59.4	58.4	61.9	54.7	1.6
1988-1989	73.7	72.5	78.6	71.2	2.3
1990-1991	93.9	94.1	95.3	93.7	3.6
1992-1993	98.3	96.0	96.7	94.4	5.2
1994-1995	93.0	90.0	87.9	80.7	6.6
1996-1997	87.1	82.3	81.1	68.3	7.5
Year of First SSI Application					
Never Applied	0.0	0.0	0.0	0.0	85.3
Pre-1984	52.1	49.7	61.8	59.6	2.7
1984-1985	10.5	9.8	8.2	8.2	0.9
1986-1987	11.3	12.2	10.9	7.6	0.9
1988-1989	10.4	12.9	9.6	8.4	1.2
1990-1991	11.7	11.4	7.8	12.2	2.0
1992-1993	3.9	4.1	1.8	4.1	2.9
1994-1995	NA	NA	NA	NA	2.3
1996-1997	NA	NA	NA	NA	2.0
One Period Disability Status[100]					
Missing	14.0	14.4	10.0	13.1	15.4
No Disability	6.1	6.5	3.1	2.9	64.5
Any Disability[101]	80.0	79.0	87.2	84.2	20.2
• Severe Disability[102]	72.9	70.9	83.2	80.0	15.0
Functional Limitation, ADL, and IADL Status[103]					
Missing	14.0	14.4	10.0	13.1	15.4
• None	26.6	32.4	17.2	21.7	71.9
• Any[104]	59.4	53.1	73.3	65.4	12.8
• Any Severe[105]	52.3	49.3	62.6	55.5	10.6
• Multiple[106]	46.0	43.2	67.0	54.3	8.0

[99] Includes individuals who were SSI recipients in at least one month during the two-year period.

[100] Based on definition of disability used by McNeil (1993) and Kruse (1997).

[101] Reports: a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; or has a disabling mental or emotional condition.

[102] Includes those who use a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

[103] Based on definition of disability used by Hu, Lahiri, Vaughan, and Wixon (1997).

[104] Functional Limitations, ADLs, and IADL include the following categories: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, and walking.

[105] A severe Functional Limitation, ADL, or IADL means that the respondent either required personal assistance or was unable to perform a certain task.

[106] Includes those who report difficulties with at least two functional limitations, ADLs, or IADLs.

1991, 1992 and 1993 SIPP samples of AFDC cases exclude those who transitioned from AFDC to SSI between 1990 and the relevant interview data for the later panel.[107] These trends show that a substantial number of transitions from AFDC to SSI occurred during this pre-reform period, but do not tell us whether earlier cohorts of AFDC recipients transitioned to SSI at a different rate.

The number of young female AFDC recipients transiting to SSI is even more impressive when viewed relative to the size of the number of young women in the SSI caseload. The 9.2 percent of the AFDC cases represented by the pooled sample that applied for SSI between 1990 and 1997 represent 57.5 percent of our estimate of the mean number of female SSI recipients in the age groups in 1990-1993. The 7.5 percent of the same group that were SSI recipients in 1996-1997 is equivalent to 46.9 percent of the mean estimate for young female SSI recipients in 1990. Again, these figures understate the extent of the transitions because of the way the sample are defined.[108]

An increase in transitions over this period is evident from changes in the characteristics of SSI recipients over the four SIPP samples (***Appendix Exhibits E.1 – E.4***). As with other groups of SSI recipients, the total number of young female SSI recipients grew substantially from 1990 to 1993 (from 290 to 555 thousand). The characteristics of young female SSI recipients changed from 1990 to 1993 in three related ways. In comparison to those in 1990, 1993 recipients were more likely to be married (20.4 vs. 10.2 percent), have a child (37.6 vs. 23.7 percent) and be from an AFDC family (23.4 vs. 14.6 percent). As discussed in the previous chapter, these changes may reflect a number of factors that have increased SSI applications and allowances, including: administrative changes in SSI that have made it easier to obtain eligibility for some impairments; spillover effects of Zebley; outreach efforts by SSA states and advocacy groups; and loss of own earnings or earnings of a spouse due to the recession (see the previous chapter). We have not found evidence that this trend is partly due to AFDC reforms, but neither can we rule it out.

C. Children

Our analysis for children is similar to that for adults. We first discuss descriptive statistics for SSI children, then compare their characteristics to those of AFDC children, and finally examine transitions from AFDC to SSI. Characteristics are presented in ***Exhibit 5.4***, which appears at the end of this section. We identify child SSI and AFDC recipients in the same manner as for adults.

[107] Statistics for AFDC recipients in just the 1990 SIPP appear in ***Appendix Exhibit E.5.*** Of these, 10.4 percent filed a first SSI application from 1990 to 1997, including 3.7 percent in 1992-1993. The percent receiving a payment from 1988-1989 to 1996-1997 more than quadrupled.

[108] If we use the data for the 1990 SIPP panel, alone, we find that the number of first applications from 1990 to 1997 for young women who were AFDC recipients in 1990 is estimated to be equal to 92.0 percent of the young female SSI caseload in 1990. The number who were recipients in 1996-1997 is 66.4 percent of the 1990 SSI caseload for young women.

Exhibit 5.4
Mean Characteristics of 1990-1993 Child SSI and AFDC Recipients [109]

	Age 0 to 17	
CHARACTERISTICS	**SSI Children**	**AFDC Children**
Total		
Mean Sample Size	176	1,486
Mean Population Size Estimate (x1,000)	442.8	6,905
Attrition [110]		
% not completing one year of SIPP	11.0	15.0
% not completing full SIPP panel	26.7	32.1
Sex		
Male	65.2	50.5
Female	35.8	49.5
Age		
0-2	6.1	23.6
3-5	14.0	21.0
6-12	45.0	37.9
13-17	34.8	17.5
Race/Ethnicity		
Hispanic	16.1	22.2
Black (excluding Hispanic)	45.4	37.1
White	36.1	34.5
Other	2.3	6.2
Household Size [111]		
1 person	0.0	0.0
2 persons	8.3	7.1
3-4 persons	45.7	44.5
5 persons or more	46.1	48.3
Family Size [112]		
1 person	2.0	0.1
2 persons	9.9	8.1
3-4 persons	44.2	45.7
5 persons or more	43.9	46.1
Children and Adults in Household and Family [113]		
% w/at least one other child in household	82.3	87.3
% w/at least one other child in family	81.1	87.2

[109] Includes children whose families were interviewed in first wave of the 1990, 1991, 1992, or 1993 SIPP panels. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment. Our SSI sample includes individuals who were recipients according to SSA records in January of the calendar year. Our AFDC sample includes individuals who lived in families that received an AFDC payment during January of that year. First wave weights were used to produce population mean estimates for each year. Values reported are unweighted means of the annual estimates.

[110] Excludes individuals who died during the panel period.

[111] Based on household size at first interview.

[112] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[113] Children include individuals under age 18.

Exhibit 5.4 (continued)
Mean Characteristics of 1990-1993 Child SSI and AFDC Recipients

	Age 0 to 17	
CHARACTERISTICS	**SSI Children**	**AFDC Children**
Parents in the Family[114]		
Mother-only	52.2	79.9
Father-only	1.6	1.9
Both parents present	41.1	17.8
Missing parent or no parent present	5.1	0.7
Monthly Family Income for January (in 1993 dollars)[115]		
Less than $500	15.6	33.5
$500-$999	26.5	39.6
$1,000-$1,499	22.8	12.0
$1,500-$1,999	11.5	4.8
$2,000 or more	23.5	9.9
Mean	$1,393	$965
Family Income % of Poverty for January[116]		
Less than 1.00	55.7	82.8
1.00-1.49	20.0	9.0
1.50-2.00	8.8	3.9
2.00-2.99	11.9	2.6
3.00 or more	3.6	1.6
Household Assets (in 1993 dollars)[117]		
Missing	11.4	14.2
$0-$1,999	43.5	60.3
$2,000-$9,999	18.0	12.7
$10,000-$24,999	10.8	4.7
$25,000 or more	16.3	8.0
Mean	$19,835	$9,286
Program Participation		
SSI	100.0	1.9
AFDC[118]	29.4	100.0
Food Stamps	46.8	91.6

[114] A small number of children in the SIPP do not have a "parent" present because they either live on their own or there is no parent present.

[115] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[116] Based on monthly income for January.

[117] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Assets are adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[118] One or more family members received benefits in January of year indicated.

Exhibit 5.4 (continued)
Mean Characteristics of 1990-1993 Child SSI and AFDC Recipients

	Age 0 to 17	
CHARACTERISTICS	**SSI Children**	**AFDC Children**
SSI Recipiency In Other Years[119]		
Never a Recipient	0.0	94.6
Pre-1984	14.3	0.1
1984-1985	23.5	0.3
1986-1987	34.8	0.4
1988-1989	59.5	1.0
1990-1991	89.5	2.1
1992-1993	99.4	4.0
1994-1995	95.1	5.0
1996-1997	91.2	5.1
Year of First SSI Application		
Never Applied	0.0	89.4
Pre-1984	17.3	0.2
1984-1985	13.1	0.4
1986-1987	16.2	0.5
1988-1989	17.2	0.5
1990-1991	26.2	1.4
1992-1993	9.9	3.3
1994-1995	NA	2.9
1996-1997	NA	1.4
One Period Disability Status[120]		
Missing	14.3	16.3
No Disability	29.6	78.7
Any Disability	56.0	5.0

[119] Includes individuals who were SSI recipients in at least one month during the two-year period.

[120] There are two definitions of disabilities used based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work.

1. Child SSI Recipients

A large majority of child SSI recipients in this four-year period were male (65.2 percent), over the age of six (79.8 percent), lived in families with other children (81.1 percent), and lived in families whose monthly income was 150 percent of poverty or less (75.7 percent). Just over half lived only with their mother (52.2 percent).

Findings from the National Longitudinal Transition Study of Special Education Students, conducted from 1987 to 1990, may provide part of the explanation for high transition rates among young female AFDC recipients. Wagner, *et. al*., (1993) reported that 41 percent of young women with disabilities became mothers within five years of leaving school, compared to 28 percent for other young women. Only 16 percent of young men with disabilities became fathers over the same period. For women, the highest parenting rates were among those with learning disabilities (50 percent), serious emotional disturbances (48 percent), or are hearing impaired (48 percent). We do not know, however, whether these are higher figures than in earlier years, or whether the share of these women who transitioned to SSI increased. One untested hypothesis is that the share of such women who became child SSI recipients increased because of *Zebley* and changes to the child listing for mental impairments, but this would not explain the transitions among those who were 18 or over and receiving AFDC when we observed them in SIPP. Changes in the consideration of symptoms, source evidence, and drug and alcohol abuse in the disability determination process might have contributed, but this is difficult to test.

The SIPP respondent in the child's household reported that the child had a disability in just 56 percent of cases, and the information was missing in 14.3 percent of cases.[121] We assume that almost all SSI children had some form of disability, and that the 29.6 percent reported to have no disability reflects very significant under-reporting of child disability in SIPP.

In the absence of the SSI program, many of these children would likely be eligible for AFDC. Like AFDC children, the SSI children live predominately in low-income, mother-only families. In fact, a substantial portion of the child SSI recipients during this period already lived in an AFDC family (29.4 percent). This is a reasonable lower bound for the share of SSI children who would be AFDC eligible if they were not receiving support from SSI.

2. Comparison of AFDC Children to SSI Children

As with adults, we compare disability and income characteristics of AFDC and SSI children to assess the potential SSI eligibility of AFDC children. Approximately five percent of AFDC children had some type of disability.[122] While this percentage is relatively small, it represents 345 thousand AFDC children with a disability – compared to a child SSI caseload estimated at 443 thousand children.[123] Further, given the undercount for child disability that is evident for SSI

[121] There are two definitions of disabilities used based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work. The actual percentage of children reporting a disability is larger than 56 percent because 14.3 percent of the cases had missing values.

[122] This percentage was slightly higher because it includes 16.3 percent of cases with missing values.

[123] This number is 5.0 percent of 6.9 million AFDC children.

children, the number of AFDC children with some disability was probably much larger. The severity of disability among AFDC children with disabilities is probably much lower than among SSI children, and would likely not meet SSI medical criteria in a very large share of cases. Unfortunately, the very limited information in SIPP about child disability does not permit a meaningful assessment of severity. Virtually all AFDC children would probably meet non-medical SSI eligibility criteria because the SSI means test is less stringent; AFDC children were more likely than SSI children to live in a family that had family income below 150 percent of poverty (91.8 vs. 75.7 percent).

3. Transitions from AFDC to SSI

As with young female AFDC recipients, we find a gradual increase in the percent of child AFDC recipients who became SSI recipients. We find that 9.2 percent of the child AFDC recipients represented by the pooled sample applied for SSI between 1990 and 1997. The percent of child AFDC recipients who received SSI in a two-year period increased from 1.0 percent in 1988-89 to 5.1 percent in 1996-97.[124] The largest increase (1.9 percentage points) occurred from 1990-91 to 1992-93, following *Zebley*. First applications in 1992-93 were substantially higher (3.3 percent). As with adult women, this understates the extent of the transitions because of the way the sample is constructed.[125]

The numbers represented by these small percentages of AFDC cases are very large relative to the size of the SSI child caseload. The estimated number of first applications filed since 1990 is 146.7 percent of the estimated mean child SSI caseload from 1990 to 1993, and the estimated number receiving benefits in 1996-1997 is 79.5 percent of the same figure. [126]

The increase in transitions had a substantial effect on characteristics of child SSI recipients from 1990 to 1993.[127] The number of child SSI recipients grew over this period from 349 to 555 thousand. In comparison to the 1990 SSI child recipients, the 1993 SSI child recipients were more likely to be male (69.3 vs. 59.8 percent), white (42.9 vs. 23.4 percent), and live with another child in the family (83.5 vs. 67.0) (see ***Appendix Exhibit E.6***).

In the next section, we will examine the characteristics of those children who applied for SSI during this period, as well as of those who were awarded payments.[128]

IV. CHARACTERISTICS OF POST-SIPP SSI APPLICANTS AND RECIPIENTS

We created samples of post-SIPP SSI applicants and recipients to examine the characteristics of individuals who became SSI applicants and recipients during the pre-reform period. For adults,

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[124] This growth pattern is consistent across AFDC recipients in each SIPP panel.

[125] If we consider just the 1990 SIPP sample for AFDC children (***Appendix Exhibit E.7***), the percent who filed their first application between 1990 and 1997 is 9.4 percent, and the percent who received SSI in a two-year period increased from 1.8 in 1988-1989 to 6.5 in 1996-1997.

[126] If we just use the 1990 SIPP child sample (***Appendix Exhibit E.7***), the number who file first applications between 1990 and 1997 is estimated to be 155.3 percent of the 1990 SSI child caseload and the number receiving benefits in 1996-1997 is 107.4 percent of the same figure.

[127] For a detailed discussion of the legislative changes for SSI children, see Lewin (1998).

[128] See Garrett and Glied (1997) and Kubik (1998). Discussion of these articles appears in this project's background report (Lewin, 1998b).

we present statistics for the four age-sex groups. We also compare the characteristics of post-SIPP SSI recipients to "existing recipients" -- those who were SSI recipients at the start of the SIPP interviews, examined earlier -- to determine the extent to which the post-SIPP recipients "looked like" the existing recipients at the initial interview, apart from participating in SSI.

To generate large enough samples of specific demographic groups of SSI applicants, we pooled data from the 1990 through 1993 SIPP panels. Individual panel samples were too small to produce reliable estimates. We only include individuals who became new applicants or recipients in the five years following their first SIPP interview. The post-SIPP samples include those who became a new SSI applicant and/or recipient between: February 1990 and January 1995 in the 1990 SIPP; February 1991 and January 1996 in the 1991 SIPP; February 1992 and January 1997 in the 1992 SIPP; and February 1993 and January 1998 in the 1993 SIPP. The applicant samples in each demographic group are substantial (e.g., 562 for young women and 1,127 for children). Those who receive benefits are smaller in number, but still sufficiently numerous for meaningful analysis (e.g., 323 for young women and 528 for children). All the descriptive statistics presented are based on the first SIPP interview. When interpreting them, it is important to keep in mind that some key characteristics may have changed between the SIPP observation data and the SSI application or allowance. The statistics are unweighted means, and thus do not represent population estimates. While we think biases are small, a special sample of the low income population that was included in just the 1990 SIPP may be a source of bias in the unweighted statistics.[129] We present findings for post-SIPP applicants first, then compare findings for post-SIPP recipients.

A. Post-SIPP Applicants

1. Adults

In the first four columns of ***Exhibit 5.5***, we present characteristics of adult post-SSI applicants at the time of their first SIPP interview. As before, in earlier discussions of recipients, we focus on young women and make comparisons to the other groups. The characteristics reported are not weighted.

Adult post-SIPP applicants in all four groups were similar in many respects. The majority was white, had 12 years of education or less, and lived in a family with at least one other adult. While at least 60 percent of all adult applicant groups lived in a family with at least one other adult, with the exception of older men, most were not married.[130] Almost 50 percent of individuals in each group lived in families whose monthly income was below 150 percent of

[129]We were unaware of this feature of the sampling methodology for the 1990 SIPP at the time we produced the statistics. We calculated unweighted means because we were interested in the written sample variation of each variable, in anticipation of the hazard analysis presented later. This information helped us decide which explanatory variables and categories to use in the models. We could have, instead, used SIPP first-wave weights in the same way that we used them for estimating characteristics of SSI and AFDC recipients. The population for each SIPP year would be those in the January population who filed their first SSI application (or received their first allowance) in the next five years.

[130] Just over half of post-SIPP older adult male SSI recipients were white (54.1 percent).

poverty. Young women were slightly more likely to live in a family below the poverty line than those in other groups.

Four characteristics distinguish the young women from those in the other adult groups. First, they were two times more likely to have children than any other group (63.5 vs. 27.2, 23.5, and 26.1 percent for young men, older women, and older men, respectively). Second, they were over three times more likely than any other group to be living in a family that currently received AFDC (26.5 vs. 2.3, 8.2, and 2.2 percent for young men, older women, and older men, respectively). Third, in comparison to older SSI applicants, young women had a much lower incidence of reporting disability (38.4 vs. 51.8 and 49.2 percent for older women and older men, respectively). One reason may be higher prevalence of psychiatric impairments among the younger applicants and high underreporting of such impairments in SIPP. Finally, young adult applicants of both sexes were less likely than older applicants to receive an award; 65.1 percent of the young women and 65.7 percent of the young men did not receive an award, compared to 49.2 and 47.7 percent for older women and older men, respectively.

2. Children

In the final column of ***Exhibit 5.5***, we present characteristics of post-SIPP child SSI applicants. The majority of post-SIPP child SSI applicants were male (65.0 percent), from mother-only families (52.6 percent), lived in a family whose income was below 150 percent of poverty (71.6 percent), lived in a family that received Food Stamps (51.7 percent), and reported no disability (at least 61.4 percent). A large share of these children lived in an AFDC family when first observed in SIPP (39.0 percent), providing more evidence that SSI eligibility changes following *Zebley* shifted children from AFDC to SSI. Finally, 56.8 percent of these applicants did not become an SSI recipient, at least during the five-year period. This denial rate was slightly higher than for older adults, but lower than for young adults.

B. Post-SIPP SSI Recipients

1. Adults

Characteristics of post-SIPP SSI recipients (i.e., those who first became recipients during the first five years after they were observed in SIPP) are reported in ***Appendix Exhibit E.8***. In general, we find that the comparisons of post-SIPP recipient groups are parallel to the comparisons of post-SIPP applicants. Hence, we focus on the differences between post-SIPP applicants and recipients. While we only discuss our findings for young women, we find the same pattern of results for other adult groups.

In comparison to young female applicants, that young female recipients were older (57.3 vs. 49.5 percent were over age 30), had less education (45.2 vs. 39.7 percent did not have a high school diploma), and were more likely to: be living in a family whose income was below 150 percent of poverty (68.4 vs. 61.4 percent); be participating in AFDC (29.4 vs. 26.5 percent) or Food Stamps (48.9 vs. 39.0 percent); and have reported a disability (50.5 vs. 38.4 percent). The figures for AFDC participation imply that such applicants had allowance rates that were slightly above average.

Exhibit 5.5
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[131]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Total					
Sample Size	562	481	631	445	1,127
Sample Size by Panel					
1990	194	160	213	146	294
1991	83	87	127	97	221
1992	145	125	142	105	297
1993	140	109	149	97	315
Sex					
Male	0.0	100.0	0.0	100.0	65.0
Female	100.0	0.0	100.0	0.0	35.0
Age					
0-5	NA	NA	NA	NA	38.2
6-12	NA	NA	NA	NA	37.2
13-17	NA	NA	NA	NA	24.7
18-30	50.5	50.7	NA	NA	NA
31-40	49.5	49.3	NA	NA	NA
41-50	NA	NA	47.5	46.3	NA
51-60	NA	NA	39.5	41.8	NA
61-64	NA	NA	13.0	11.9	NA
Marital Status					
Married	33.8	30.1	42.8	56.0	NA
Never Married	37.9	50.5	10.9	13.0	NA
Divorced/Separated/Widowed	28.3	19.3	46.2	29.0	NA
Race/Ethnicity					
Hispanic	13.0	14.6	20.1	15.3	15.5
Black (excl. Hispanic)	25.1	20.6	19.8	17.8	37.5
White	57.5	61.5	53.9	61.6	44.5
Other	4.4	3.3	6.2	5.4	2.5
Education Attained[132]					
0-11 years	39.7	38.3	49.9	51.2	NA
12 years	36.8	41.6	33.3	32.8	NA
13-15 years	19.0	15.6	12.4	10.6	NA
16 or more years	4.4	4.6	4.4	5.4	NA
Household Size[133]					
1 person	6.4	13.1	17.6	21.3	0.2
2 persons	22.1	20.2	34.7	30.8	5.3
3-4 persons	46.1	43.9	31.7	31.7	51.6
5 persons or more	25.4	22.9	16.0	16.2	42.9

[131] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[132] Includes the number of education years completed. Persons who receive a high school equivalency are included in the 12 years category.

[133] Based on household size at first interview.

Exhibit 5.5 (Continued)
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[134]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Family Size[135]					
1 person	13.5	26.2	22.0	31.7	0.9
2 persons	19.2	14.8	32.0	25.4	6.7
3-4 persons	44.1	39.5	30.9	28.1	51.4
5 persons or more	23.1	19.5	15.1	14.8	41.0
Parents in the Family[136]					
Mother-only	NA	NA	NA	NA	52.6
Father-only	NA	NA	NA	NA	3.0
Both parents	NA	NA	NA	NA	44.2
Missing parent or no parent	NA	NA	NA	NA	0.2
Children and Adults in the Household and Family[137]					
% w/at least one child in household	72.1	47.8	36.8	33.0	NA
% w/at least one adult in household (other than the recipient)	69.4	85.9	73.1	77.3	NA
% w/at least one child in the family	69.9	43.0	36.0	31.5	NA
% w/at least one adult in family (other than recipient)	60.0	72.1	68.1	66.3	NA
Own Children[138]					
Percent with Own Children	63.5	27.2	23.5	26.1	NA
Age of Youngest Child					
• None	8.9	5.8	76.5	73.9	NA
• 0-2	20.6	10.6	0.8	2.2	NA
• 3-5	12.9	4.6	1.9	1.6	NA
• 6-12	20.0	8.9	5.4	11.0	NA
• 13-17	8.3	3.1	15.4	11.3	NA
Monthly Family Income for January (1993 dollars)[139]					
Less than $500	26.7	15.2	16.8	22.7	24.5
$500-$999	21.5	16.0	20.3	13.0	25.6
$1,000-$1,499	12.8	15.8	17.3	13.3	13.3
$1,500-$1,999	8.4	12.3	10.1	11.2	10.5
$2,000 or more	30.6	40.7	35.5	39.8	26.2
Mean	$1,652	$2,193	$1,911	$2,021	$1,583

[134] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[135] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[136] A small number of children in the SIPP do not have a "parent" present because they either live on their own or there is no parent present.

[137] Children include individuals under age 18.

[138] Includes only those with children under 18 who are living in the family at the time of the SIPP interview.

[139] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

Exhibit 5.5 (Continued)
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[140]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Family Income as a Percent of Poverty for January[141]					
Less than 1.00	48.2	29.3	30.6	32.6	57.5
1.00-1.49	13.2	13.5	18.5	13.9	14.1
1.50-2.00	11.0	14.1	14.6	11.5	10.4
2.00-2.99	12.3	21.0	17.0	20.0	9.6
3.00-3.99	7.3	9.8	8.7	8.3	4.0
4.00 or more	8.0	12.3	10.6	13.5	4.4
Monthly Personal Income for January (in 1993 dollars)[142]					
Less than $500	54.4	43.7	52.5	38.2	NA
$500-$999	26.0	19.5	24.6	16.4	NA
$1,000-$1,499	10.5	15.6	12.8	15.5	NA
$1,500-$1,999	4.4	7.9	3.8	10.6	NA
$2,000 or more	4.6	13.3	6.2	19.3	NA
Mean	$611	$904	$655	$1,211	NA
Household Assets (in 1993 dollars)[143]					
Missing	14.9	21.6	8.7	13.0	12.2
$0-$1,999	41.3	27.7	31.9	25.6	45.0
$2,000-$9,999	17.8	15.6	14.1	14.8	14.6
$10,000-$24,999	8.7	8.7	11.6	13.3	10.3
$25,000 or more	17.3	26.4	33.8	33.3	17.9
Mean (of non-missing values)	$19,643	$45,641	$36,658	$46,065	$22,978
January Labor Earnings					
% w/own labor earnings	37.9	55.3	41.7	57.5	NA
% in family w/earnings[144]	61.4	75.3	71.2	71.2	NA
Program Participation of Family[145]					
AFDC	26.5	2.3	8.2	2.2	35.9
Food Stamps	39.0	13.7	19.7	12.8	51.7
Past Program Participation of Family[146]					
Missing	2.7	5.6	4.0	6.3	NA
Past AFDC Recipient	39.9	2.5	11.9	2.2	NA
Past Food Stamps Recipient	48.8	22.7	33.2	21.3	NA

[140] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[141] Based on monthly income for January.

[142] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[143] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Assets are adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[144] Includes earnings from the SSI applicant.

[145] One or more family members received benefits in January of year indicated.

[146] Individual received benefit in or prior to January of year indicated.

Exhibit 5.5 (Continued)
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[147]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Duration to First SSI Receipt					
No receipt through five years	65.1	65.7	47.7	49.2	56.8
1 Year	5.0	5.8	10.5	10.6	10.2
2 Years	6.1	8.5	10.9	8.1	9.9
3 Years	7.8	7.3	9.8	12.8	9.7
4 Years	10.0	5.4	11.9	11.5	6.7
5 Years	6.1	7.3	9.2	7.9	6.7
Duration to First SSI Application					
1 Year	18.0	18.1	23.0	24.0	17.8
2 Years	20.5	23.1	22.7	20.2	22.8
3 Years	20.5	21.0	19.8	20.7	21.9
4 Years	21.0	18.7	19.8	19.6	19.2
5 Years	20.0	19.1	14.7	15.5	18.3
Health Status					
Missing	17.1	24.3	11.3	15.5	NA
Poor	8.0	7.7	16.8	18.0	NA
Fair	21.5	13.3	27.1	24.5	NA
Good	28.3	26.4	29.2	28.5	NA
Excellent/Very Good	25.1	28.3	15.7	13.5	NA
One Period Disability Status[148]					
Missing	17.1	24.3	11.3	15.5	15.0
No Disability	44.5	42.8	36.9	35.3	61.4
Any Disability[149]	38.4	32.8	51.8	49.2	23.6
• Severe[150]	29.7	22.7	42.6	36.4	NA

[147] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[148] Based on definition of disability used by McNeil (1993) and Kruse (1997). Definition of disability for children is different from that for adults

[149] There are two definitions of disabilities used for children based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work. For adults, the definition includes reports a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; has a disabling mental or emotional condition.

[150] Includes those who use a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

Exhibit 5.5 (Continued)
Characteristics of Post-SIPP SSI Applicants in the 1990 through 1993 SIPP Panels[151]

CHARACTERISTICS	Age 18 to 40		Age 41 to 64		Age 0 to 17
	Women	Men	Women	Men	Children
Functional Limitation, ADL, and IADL Status					
Missing	17.1	24.3	11.3	15.5	NA
None	54.8	57.8	47.9	49.4	NA
Any[152]	28.1	17.9	40.9	35.1	NA
• Any Severe[153]	22.8	14.6	33.4	28.1	NA
• Multiple	19.4	11.9	30.7	25.8	NA
Multi-period Work Limitation Status[154]					
Missing	25.6	28.7	13.2	16.6	20.7
1991 Panel[155]	14.8	18.1	20.1	21.8	19.6
No limitations	27.6	24.3	24.9	22.2	36.7
Only one month	23.7	18.5	31.1	29.2	10.1
Both months	8.4	10.4	10.8	10.1	12.9

2. Children

Characteristics of post-SIPP SSI child recipients are also reported in ***Appendix Exhibit E.8***. We find that the characteristics of post-SIPP child applicants and recipients are very similar, with two exceptions. Post-SIPP recipients were more likely than applicants to have a reported disability (33.0 vs. 23.6 percent) and to have participated in Food Stamps (62.5 vs. 51.7 percent). The percent who had been living in an AFDC family is almost the same as for applicants, indicating that applicants from AFDC families had approximately average allowance rates.

C. Comparison of Post-SIPP SSI Recipients to SSI Recipients During the First SIPP Interview

In ***Exhibit 5.6***, we provide a summary of differences in characteristics of existing SSI recipients (i.e., those who were SSI recipients at their first interview) and post-SIPP SSI recipients, by demographic group. Again, we focus on comparisons for young women.[156]

In comparison to existing young female SSI recipients, we find that post-SIPP recipients were more likely to have been married (34.4 vs. 13.3 percent), have had children (67.5 vs. 35.7 percent), participated in AFDC (29.4 vs. 20.6 percent), and were less likely to have reported a disability (50.5 vs. 80.0 percent). For child SSI recipients, we find similar patterns. In

[151] Includes individuals who became SSI applicants five years after their first SIPP interview in the 1990, 1991, 1992, or 1993 SIPP Panel. Based on application records from the matched SSA files.

[152] Functional Limitations, ADLs, and IADL include the following categories: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, and walking.

[153] A severe Functional Limitation, ADL, or IADL means that the respondent either required personal assistance or was unable to perform a certain task.

[154] Based on limitations reported in October of current year and October of the following year. See Burkhauser and Wittenburg (1996).

[155] The 1991 SIPP panel did not include 2 topical modules on Functional Limitations.

[156] Interestingly, we find the same general patterns for all adult groups, with the exception of AFDC recipients.

comparison to existing child SSI recipients, post-SIPP recipients were more likely to have participated in AFDC (37.5 vs. 29.4 percent) and were less likely to have reported a disability (20.2 vs. 56.0 percent). One obvious reason for all of these differences is unobserved changes in characteristics between the time the post-SIPP recipient was observed in SIPP and the first date of SSI receipt.

The large differences in characteristics between SSI recipients at their first interview and post-SIPP SSI recipients are problematic for forecasting the number of potential SSI recipients. As mentioned above, the two most likely characteristics to identify potential SSI recipients would be disability and income. A significant portion of post-SIPP recipients, however, did not have a disability when first observed in SIPP. For example, only 50.5 percent of young, female, post-SSI recipients had a reported disability. Reported disability levels for other demographic groups were similar. Further, over 30 percent of all groups of post-SIPP SSI recipients (see ***Appendix Exhibit E.8***) lived in families whose incomes were over 150 percent of poverty, and over 11 percent lived in families whose income was over 300 percent of poverty.

Exhibit 5.6
Comparison of SSI Recipients at their first SIPP Interview to Post-SIPP Recipients[157]

Demographic Groups	Adults Marital Status: % Married	Adults: % with Own Children	Children: % in Mother-Only Families	Family Income: % Low-Income Families[158]	Program Participation: AFDC	One Period Disability Status: Reported Disability
Young Women (Age 18 to 40)						
SSI Recipients at First Interview	13.3	35.7	NA	67.5	20.6	80.0
Post-SIPP SSI Recipients	34.4	67.5	NA	68.4	29.4	50.5
Young Men (Age 18 to 40)						
SSI Recipients at First Interview	12.0	9.4	NA	57.3	4.3	79.0
Post-SIPP SSI Recipients	30.2	27.0	NA	51.0	4.0	38.3
Older Women (Age 41-64)						
SSI Recipients at 1st Interview	18.6	8.5	NA	80.2	11.5	87.2
Post-SIPP SSI Recipients	38.5	20.5	NA	61.4	7.4	59.8
Older Men (Age 41 to 64)						
SSI Recipients at 1st Interview	35.2	13.6	NA	78.9	4.4	84.2
Post-SIPP SSI Recipients	54.1	24.0	NA	57.7	4.1	53.6
Children (Age 0 to 17)						
SSI Recipients at First Interview	NA	NA	52.2	75.7	29.4	56.0
Post-SIPP SSI Recipients	NA	NA	53.2	69.3	37.5	20.2

[157] Characteristics represent a summary of ***Exhibits 5.3*** through ***5.5.*** Sample is from 1990 through 1993 SIPP panels.

[158] Includes individuals who lived in families whose income in January of the first SIPP interview was 150 percent of poverty or less.

V. ANALYSIS OF POTENTIAL TARGET AND COMPARISON GROUPS

A. Overview

In Lewin (1998), we outlined a difference-in-difference (DID) methodology that would use the matched data to compare SSI applications and allowances of survey respondents in various "target" and "comparison" (or "natural control") groups. Target groups are defined as groups that are targeted by a specific reform, such as an AFDC/TANF reform. Comparison groups are defined as groups that are not targeted, but whose applications and allowances would be affected in the same way by changes in other environmental factors, such as the economy. The simplest version of the DID methodology would follow a cohort of target and comparison group cases for a few years in the pre-reform period and compare their application and allowance experience in this period to that of a later cohort during the post-period. The impacts of the reforms would be estimated as changes in application and allowance outcomes for the pre- and post-target groups net of changes for the pre- and post-comparison groups.

In this section we explore the feasibility of defining target and comparison groups from the SIPP surveys for the purpose of evaluating the impacts of AFDC/TANF reforms on SSI applications and allowances. That is, we ask if we can define a significant target group of non-recipients that has members who might be pushed into applying for SSI by the reforms, plus a comparison group whose members: 1) will likely file some applications and receive some allowances over the period to be examined, but 2) whose outcomes will not be influenced by the reforms, and 3) whose application and allowances respond to "other factors" that change over the period in the same way as those of the target group members. Statistics presented are unweighted sample means because our primary interest is in assessing the samples available for use in later econometric analyses.

B. Adults

For adults, we examine three key characteristics for defining these groups: whether the individual has a disability when they are observed in SIPP; whether the individual is a parent of a minor child when observed in SIPP; and family income as a percent of poverty. We expect that most of those adults whose SSI applications and allowances would be influenced by the TANF reforms would have a disability, live with at least one own child under 18, and have low family income when they are observed in SIPP. Those who are most likely to also apply for SSI, but not be affected by the reforms, would probably also have a disability and low income, but not live with an own child under 18. We would expect the former group to be predominantly young and predominantly female, while the latter might include many older women as well as both young and older men.

For these tables we count people who have any limitation or who report poor health as having a disability. We use this inclusive definition to both increase the sample sizes of the groups of interest and to capture people whose disabilities might not be very severe when observed, but might become severe in the future. We do not confine the target group to adults who are already TANF recipients. This is because in many states the reforms under consideration are intended to divert families from entering TANF as much as they are intended to help encourage existing recipients to leave.

1. Women

We present descriptive statistics on young women by disability status and parental status for those in families with incomes below 150 percent of poverty (***Exhibit 5.7***). If we consider only individuals with disabilities as potential target or comparison group members, we can define some reasonable groups. The most obvious target group is young mothers with a disability and with incomes under 150 percent of poverty. There are 1,079 young women in the four SIPP panels who were in this group when first observed. Of these, 988 (98.6 percent) were not existing SSI recipients, 425 (39.4 percent) were current AFDC recipients, and 92 (8.5 percent) filed their first SSI application after they were first observed in SIPP and before July 31, 1966.

One comparison group for this first target group is young women who were not mothers when observed and who reported a disability. There are 432 such cases in the SIPP sample, but 24.3 percent of these were already receiving SSI, leaving just 327 who were not,[159] and 44 (10.2 percent) filed their first SSI application after they were first observed in SIPP and before July 31, 1966. This comparison group differs from young mothers with disabilities in ways other than family composition. They are somewhat younger, more educated, more likely to be the only member of their family in the household, more likely to have earnings, and more likely to have severe or multiple functional limitations. Weights or multivariate methods could be used to make adjustments for these differences. One problem that would be difficult to adjust for is that these women may enter the target population for TANF reform at a later date, by becoming mothers. The fact that they are not currently mothers may be related to their relatively young ages.

A second candidate comparison group for this first target group is young mothers with disabilities whose incomes are between 150 and 400 percent of poverty. Descriptive statistics for young women whose family incomes are in this range are present in ***Appendix Exhibit E.9***. There are 926 observations in this group; only very small numbers were either SSI recipients or in AFDC families when first observed in SIPP. They may, however, be a poor comparison group, for two reasons. First, only a small share of these mothers (3.8 percent or 35 women) filed an application for SSI after they were first observed in SIPP and before July 31, 1996. This suggests that applications from only a very small number of these women would be sensitive to the other factors that we would be using them to control for; i.e., most cases in this group would not be very useful as controls. Second, many women in this group might enter the target group for the reforms at a later date. For instance, almost 80 percent were married when observed, and a divorce might well reduce their income to below 150 percent of the federal poverty line. Hence, we are skeptical about using this group as a comparison group.

[159] A small number in this group reported they were in an AFDC family. Presumably these individuals are not in the actually AFDC family unit, which may exclude some adults in the household.

Exhibit 5.7
Characteristics of Young Women (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status[160]

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Total					
Number	9,691	1,079	5,678	432	2,502
Sample Size by Panel					
1990	2,822	275	1,691	121	735
1991	1,802	218	1,010	84	490
1992	2,459	255	1,443	121	640
1993	2,608	331	1,534	106	637
SSI Application and Recipiency[161]					
SSI Recipient at First SIPP Interview	2.5	8.4	0.3	24.3	1.2
Filed SSI Application after First SIPP Wave and before July 31, 1996	3.8	8.5	3.2	10.2	2.2
Received SSI after First SIPP Wave and before July 31, 1996	2.4	7.4	1.6	9.3	1.0
Program Participation of Family[162]					
AFDC	21.7	39.4	28.5	2.3	2.0
Food Stamps	34.5	56.7	42.3	23.1	9.0
Past Program Participation of Family[163]					
Missing	4.1	10.5	3.2	1.4	8.2
Past AFDC Recipient	31.5	56.6	41.7	2.5	2.5
Past Food Stamps Recipient	44.2	67.7	52.1	35.1	17.6
Age					
18-30	60.6	42.7	55.7	60.0	79.3
31-40	39.4	57.3	44.3	40.0	20.7
Marital Status					
Married	37.4	43.6	49.1	12.0	12.5
Never Married	39.6	21.2	25.5	65.7	75.2
Divorced/Separated/Widowed	23.0	35.0	25.4	22.2	12.4

[160] Includes individuals who were interviewed in the first wave of the 1990, 1991, 1992, or 1993 SIPP Panels. Characteristics are not weighted. Income is based on amount reported in January of each panel. We count any individual as having a disability if s/he:

- reported a limitation in kind or amount of work or housework he or she can do;
- had difficulty with any of the functional activities or ADLs; uses a wheelchair;
- had used a cane, crutches, or walker for more than six months;
- had a disabling mental or emotional condition;
- reported difficulties in any of the following: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, or walking; or
- reports that their current health status is "poor."

[161] Based on records from the matched SSA files. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment.

[162] One or more family members received benefits in January of year indicated.

[163] Individual received benefit in some period prior to January of year indicated.

Exhibit 5.7 (continued)
Characteristics of Young Women (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Race/Ethnicity					
Hispanic	19.5	15.8	22.3	8.6	16.6
Black (excluding Hispanic)	20.0	20.8	21.9	20.8	15.2
White	56.0	60.1	51.4	66.9	62.9
Other	4.5	3.3	4.4	3.7	5.3
Education Attained[164]					
0-11 years	33.9	39.8	36.9	27.3	25.7
12 years	40.7	43.7	42.2	41.7	35.9
13-15 years	18.4	14.4	16.0	23.4	24.7
16 or more years	7.0	2.1	4.9	7.6	13.7
Household Size[165]					
1 person	5.2	0.0	0.0	27.5	15.5
2 persons	19.5	12.3	10.2	36.3	41.0
3-4 persons	44.5	54.9	52.6	24.1	25.3
5 persons or more	30.7	32.8	37.2	12.0	18.1
Family Size[166]					
1 person	15.5	0.0	0.0	54.2	50.8
2 persons	15.3	14.5	12.4	22.5	20.9
3-4 persons	40.9	54.4	52.0	15.5	14.0
5 persons or more	28.3	31.1	35.6	7.9	14.2
Adults in the Household and Family					
% with at least one adult in household (other than respondent)	71.5	61.5	67.9	71.3	83.9
% with at least one adult in family (other than respondent)	57.9	56.6	63.2	44.4	48.7
Own Children[167]					
Percent with Own Children	69.7	100.0	100.0	0.0	0.0
Age of Youngest Child					
• None	30.3	0.0	0.0	100.0	100.0
• 0-2	31.0	32.2	46.7	0.0	0.0
• 3-5	15.3	22.5	21.8	0.0	0.0
• 6-12	18.8	35.4	25.4	0.0	0.0
• 13-17	4.6	9.8	6.0	0.0	0.0

[164] Includes the number of education years completed. Persons who receive a high school equivalency are included in the 12 years category.

[165] Based on household size at first interview.

[166] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[167] Includes only those with children under 18 who are living in the family at the time of the SIPP interview.

Exhibit 5.7 (continued)
Characteristics of Young Women (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Monthly Personal Income for January (in 1993 dollars)[168]					
Less than $500	61.6	57.1	59.4	67.1	67.7
$500-$999	28.8	31.5	27.4	31.0	30.6
$1,000-$1,499	8.2	9.9	11.3	1.6	1.5
$1,500-$1,999	1.2	1.3	1.7	0.0	0.1
$2,000 or more	0.1	0.2	0.1	0.0	0.0
Mean	$415	$465	$449	$371	$323
Household Assets (in 1993 dollars)[169]					
Missing	14.4	4.4	13.6	4.4	22.5
$0-$1,999	37.9	51.4	40.9	42.8	24.3
$2,000-$9,999	19.4	19.0	18.2	24.1	21.6
$10,000-$24,999	9.8	10.5	9.2	9.7	11.1
$25,000 or more	18.4	14.6	18.2	19.0	20.5
Mean	$ 25,150	$ 16,313	$ 23,716	$ 23,328	$ 33,869
Labor Earnings					
% with own earnings	36.7	21.9	34.9	30.3	48.3
% in family with earnings[170]	59.1	46.5	61.0	41.0	63.5
Health Status					
Missing	15.9	0.0	15.9	0.0	25.7
Poor	2.2	15.2	0.0	11.8	0.0
Fair	9.4	33.5	5.8	34.7	2.9
Good	27.7	32.6	30.0	31.9	19.6
Excellent/Very Good	44.7	18.6	48.3	21.5	51.9
One Period Disability Status[171]					
Missing	15.9	0.0	15.9	0.0	25.7
No Disability	68.7	1.8	84.1	0.9	74.3
Any Disability[172]	15.4	98.2	0.0	99.1	0.0
• Severe Disability[173]	10.7	67.4	0.0	72.7	0.0

[168] Based on monthly income for January. Income is adjusted using the Consumer Price Index.

[169] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Income is adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.

[170] Includes earnings from the respondent

[171] Based on definition of disability used by McNeil (1993) and Kruse (1997).

[172] Reports a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; or has a disabling mental or emotional condition.

[173] Includes those who use a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

Exhibit 5.7 (continued)
Characteristics of Young Women (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Functional Limitation, ADL, and IADL Status[174]					
Missing	15.9	0.0	15.9	0.0	25.7
None	74.6	39.8	84.1	38.0	74.3
Any[175]	9.5	60.6	0.0	62.0	0.0
• Any Severe[176]	7.7	48.6	0.0	51.6	0.0
• Multiple[177]	5.5	34.3	0.0	38.2	0.0

2. Fathers

Statistics for young men that correspond to those for young women in the previous exhibit appear in ***Exhibit 5.8***. There are 396 fathers who reported disabilities and whose family incomes were below 150 percent of poverty when first observed – about 40 percent of the corresponding figure for mothers. Of these, 91.7 percent were not receiving SSI when first observed in SIPP, 6.6 percent filed their first application for SSI after they were first observed in SIPP and before July 31, 1996, and 13.9 percent were members of AFDC families. These fathers could also be considered as a target group. The effects of TANF reforms on this group will likely be smaller than for the comparable female group because a relatively small share was receiving AFDC when observed. One characteristic of this group that makes them quite different from the corresponding female group is that a very large share was married (91.2 percent vs. 43.6 percent). This is likely to be related to their relatively low AFDC participation, and again suggests that AFDC reforms would have a lesser impact on this group than on their female counterparts.

There are 562 young men in the sample who had disabilities when first observed in SIPP and who were not fathers at the time – a possible comparison group for the male target group identified above. Of these, only 422 (75.1 percent) were not already on SSI (29 percent more than for comparable women), while 51 (9.1 percent) applied for SSI after they were first observed in SIPP and before July 31, 1996. Their characteristics differ from those in the male target group in ways analogous to the differences between the characteristics of the corresponding female target and comparison groups.

[174] Based on definition of disability used by Hu, Lahiri, Vaughan, and Wixon (1997).
[175] Functional Limitations, ADLs, and IADL include the following categories: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, and walking.
[176] A severe Functional Limitation, ADL, or IADL means that the respondent either required personal assistance or was unable to perform a certain task.
[177] Includes those who report difficulties with at least two functional limitations, ADLs, or IADLs.

Exhibit 5.8
Characteristics of Young Men (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status [178]

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Total					
Number	6,898	396	2,557	562	3,383
Sample Size by Panel					
1990	1,935	104	727	164	940
1991	1,341	78	514	94	655
1992	1,716	88	619	128	881
1993	1,906	126	697	176	907
SSI Application and Recipiency [179]					
SSI Recipient at First SIPP Interview	3.1	8.3	0.2	24.9	1.1
Filed First SSI Application after First SIPP Wave and before July 31, 1996	3.1	6.6	1.8	9.1	2.6
Started to Receive SSI after First SIPP Wave and before July 31, 1996	1.9	6.1	1.0	5.3	1.5
Program Participation of Family[180]					
AFDC	3.2	13.9	5.2	1.1	0.8
Food Stamps	16.3	44.7	20.6	21.5	8.9
Past Program Participation of Family[181]					
Missing	5.9	1.8	4.6	1.4	8.1
Past AFDC Recipient	3.5	14.9	5.9	1.1	0.8
Past Food Stamps Recipient	24.1	51.3	30.0	30.6	15.3
Age					
18-30	59.8	35.4	43.4	55.5	75.8
31-40	40.2	51.3	56.6	44.5	24.2

[178] Includes individuals who were interviewed in the first wave of the 1990, 1991, 1992, or 1993 SIPP Panels. Characteristics are not weighted. Income is based on amount reported in January of each panel. We count any individual as having a disability if s/he:

- reported a limitation in kind or amount of work or housework he or she can do;
- had difficulty with any of the functional activities or ADLs; uses a wheelchair;
- had used a cane, crutches, or walker for more than six months;
- had a disabling mental or emotional condition;
- reported difficulties in any of the following: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, or walking; or
- reports that their current health status is "poor."

[179] Based on records from the matched SSA files. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment.

[180] One or more family members received benefits in January of year indicated.

[181] Individual received benefit in some period prior to January of year indicated.

Exhibit 5.8 (continued)
Characteristics of Young Men (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Marital Status					
Married	45.2	91.2	93.1	6.9	9.9
Never Married	45.6	2.0	2.9	73.1	78.4
Divorced/Separated/Widowed	9.2	6.8	4.0	20.0	11.7
Race/Ethnicity					
Hispanic	20.2	16.2	24.1	10.1	19.3
Black (excluding Hispanic)	13.4	10.4	9.2	21.0	15.7
White	61.4	69.7	61.8	66.5	59.4
Other	5.0	3.8	4.9	2.3	5.6
Education Attained[182]					
0-11 years	36.5	45.5	35.4	40.4	35.6
12 years	37.2	37.4	40.5	36.8	34.7
13-15 years	16.8	12.4	15.6	17.1	18.3
16 or more years	9.5	4.8	8.6	5.7	11.4
Household Size[183]					
1 person	11.0	0.0	0.0	29.4	17.6
2 persons	18.0	2.8	1.4	29.4	30.5
3-4 persons	40.1	46.0	53.1	26.7	31.8
5 persons or more	30.9	51.3	45.5	14.6	20.2
Family Size[184]					
1 person	26.4	0.0	0.0	48.4	45.8
2 persons	11.6	3.5	2.4	20.1	18.1
3-4 persons	34.6	45.7	53.0	20.8	21.7
5 persons or more	27.4	50.8	44.6	10.7	14.5
Adults in the Household and Family					
% w/at least one adult in household (other than the respondent)	87.1	94.4	97.0	69.9	81.5
% w/at least one adult in family (other than the respondent)	71.1	93.4	95.2	51.1	53.5

[182] Includes the number of education years completed. Persons who receive a high school equivalency are included in the 12 years category.

[183] Based on household size at first interview.

[184] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

Exhibit 5.8 (continued)
Characteristics of Young Men (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
Own Children[185]					
Percent with Own Children	42.8	100.0	100.0	0.0	0.0
Age of Youngest Child					
• None	57.2	0.0	0.0	100.0	100.0
• 0-2	22.5	42.7	54.1	0.0	0.0
• 3-5	8.7	22.4	20.2	0.0	0.0
• 6-12	9.7	28.5	21.5	0.0	0.0
• 13-17	1.9	6.4	4.2	0.0	0.0
Monthly Personal Income for January (in 1993 dollars)[186]					
Less than $500	51.2	43.9	29.7	67.4	65.6
$500-$999	29.3	29.8	25.8	31.7	31.5
$1,000-$1,499	12.3	17.7	28.5	0.9	2.5
$1,500-$1,999	5.1	7.1	12.7	0.0	0.1
$2,000 or more	1.2	1.5	3.1	0.0	0.0
Mean	$550	$668	$865	$356	$330
Household Assets (in 1993 dollars)[187]					
Missing	19.5	5.3	14.4	6.0	27.3
$0-$1,999	28.6	37.4	28.4	40.2	25.9
$2,000-$9,999	18.5	25.0	19.8	18.3	16.7
$10,000-$24,999	10.9	13.1	12.4	10.9	9.6
$25,000 or more	22.5	19.2	25.1	24.6	20.5
Mean	$ 33,759	$18,406	$ 32,874	$ 30,606	$ 37,564
Labor Earnings					
% with earnings	51.1	44.9	68.2	24.9	43.3
% in family with earnings[188]	64.5	63.4	80.4	38.3	57.0
Health Status					
Missing	20.6	0.0	15.8	0.0	30.0
Poor	2.3	18.9	0.0	15.3	0.0
Fair	6.4	28.5	3.9	25.8	2.5
Good	22.3	34.1	24.6	36.3	16.9
Excellent/Very Good	48.4	18.4	55.7	22.6	50.6

[185] Includes only those with children under 18 who are living in the family at the time of the SIPP interview.
[186] Based on monthly income for January. Income is adjusted using the Consumer Price Index.
[187] Total household asset values include home equity, net vehicle equity, business equity, interest earning assets held at banks or other institutions, stock and mutual fund shares, real estate, other assets, and IRA accounts. Income is adjusted using the Consumer Price Index. There are some missing values for assets because of the timing of the questions. The asset information in each SIPP panel is gathered at different points following the first interview.
[188] Includes earnings from the SSI recipient.

Exhibit 5.8 (continued)
Characteristics of Young Men (Age 18 to 40) Who Lived in Families With Income Below 150 Percent of Poverty, by Family and Disability Status

CHARACTERISTICS	Total	Parents		Non-Parents	
		With a Disability	Without a Disability	With a Disability	Without a Disability
One Period Disability Status[189]					
Missing	20.6	0.0	15.8	0.0	30.0
No Disability	65.7	1.5	84.2	0.7	70.0
Any Disability[190]	13.7	98.5	0.0	99.3	0.0
• Severe Disability[191]	8.9	61.9	0.0	66.2	0.0
Functional Limitation, ADL, and IADL Status[192]					
Missing	20.6	0.0	15.8	0.0	30.0
None	72.5	47.2	84.2	52.0	70.0
Any[193]	6.9	52.8	0.0	48.0	0.0
• Any Severe[194]	6.0	45.5	0.0	41.5	0.0
• Multiple Functional[195]	4.5	32.8	0.0	32.6	0.0

There is also a substantial group of young fathers with disabilities whose incomes were above 150 percent and below 400 percent of poverty when first observed (***Appendix Exhibit E.10***). As with young mothers, these fathers could be used as a comparison group for lower income fathers with disabilities, but the issues that made us skeptical about using the corresponding female group as a comparison group for lower income mothers with disabilities are just as much of a problem here.

C. Children

There are also serious problems in defining child target and comparison groups (***Exhibit 5.9***). The problem we found in using disability to define target and comparison groups for young adults is more severe for children. We do not present characteristics of children by disability status because of our earlier finding that only 24 percent of children who first applied for SSI in the five years after they were observed in SIPP were reported to have any disability.

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[189] Based on definition of disability used by McNeil (1993) and Kruse (1997).

[190] Reports a limitation in kind or amount of work or housework he or she can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; has a disabling mental or emotional condition.

[191] Includes those who use a wheelchair, used a cane, crutches or walker for more than six months, are unable to do a functional activity, need assistance with an ADL, report being prevented from doing work or housework, or have mental retardation, Alzheimer's, senility, dementia, or a developmental disability such as autism or cerebral palsy.

[192] Based on definition of disability used by Hu, Lahiri, Vaughan, and Wixon (1997).

[193] Functional Limitations, ADLs, and IADL include the following categories: getting around the home, sitting in chair, showering, dressing, eating, using the toilet, getting out side the home, handling money and bills, preparing a meal, doing light housework, using the telephone, lifting ten pounds, walking stairs, walking 0.25 miles, and walking.

[194] A severe Functional Limitation, ADL, or IADL means that the respondent either required personal assistance or was unable to perform a certain task.

[195] Includes those who report difficulties with at least two functional limitations, ADLs, or IADLs.

Use of income to define target and comparison groups is somewhat more attractive for children than for adults. While a vast majority of AFDC children were in families with incomes under 150 percent of poverty, many SSI children were in families with incomes between 150 and 400 percent of poverty. Further, first applications were filed for 303 sample children in the higher income group after the first SIPP interview, and another 126 received first allowances -- much larger than the samples for adults. As with adults, it may be that an event such as job loss or divorce would put these families at risk for AFDC.

Exhibit 5.9
Characteristics of Children (Age 0 to 17) Who Lived in Families With Income Below 400 Percent of Poverty, by Income Level[196]

CHARACTERISTICS	Total	Lived in Families Whose Income Was Below 150 Poverty	Lived in Families Whose Income Was Between 150 and 400 Percent of Poverty
Total			
Number	44,333	19,104	25,229
Sample Size by Panel			
1990	13,077	5,588	7,489
1991	8,254	3,454	4,800
1992	11,197	4,769	6,428
1993	11,805	5,293	6,512
SSI Application and Recipiency [197]			
SSI Recipient at First SIPP Interview	0.8	1.4	0.3
Filed First SSI Application after First SIPP Wave and before July 31, 1996	2.6	4.4	1.2
Started to Receive SSI after First SIPP Wave and before July 31, 1996	1.2	2.0	0.5
Program Participation of Family[198]			
AFDC	13.4	28.7	1.8
Food Stamps	20.4	44.2	2.3

[196] Includes children from families that were interviewed in the first wave of the 1990, 1991, 1992, or 1993 SIPP Panels. Characteristics are not weighted. Income is based on amount reported in January of each panel.

[197] Based on records from the matched SSA files. An SSI recipient is defined as an individual who is "in payment status"—i.e., SSA records show that this person was scheduled to receive a payment.

[198] One or more family members received benefits in January of year indicated.

Exhibit 5.9 (continued)
Characteristics of Children (Age 0 to 17) Who Lived in Families With Income Below 400 Percent of Poverty, by Income Level[199]

CHARACTERISTICS	Total	Lived in Families Whose Income Was Below 150 Poverty	Lived in Families Whose Income Was Between 150 and 400 Percent of Poverty
Age			
0-2	19.1	21.4	17.4
3-5	17.8	18.8	17.1
6-12	39.2	38.3	39.8
13-17	24.0	21.6	25.8
Race/Ethnicity			
Hispanic	15.8	23.1	10.3
Black (excluding Hispanic)	16.4	23.7	10.9
White	63.5	48.3	75.1
Other	4.3	4.9	3.8
Household Size[200]			
1 person	0.0	0.0	0.0
2 persons	4.6	5.8	3.7
3-4 persons	49.4	42.9	54.3
5 persons or more	46.0	51.3	41.9
Family Size[201]			
1 person	0.4	0.9	0.0
2 persons	5.5	7.1	4.3
3-4 persons	49.5	43.2	54.3
5 persons or more	44.5	48.7	41.3
One Period Disability Status[202]			
Missing	11.2	15.5	7.9
No Disability	84.8	79.9	88.5
Any Disability	4.0	4.6	3.6

D. Summary of Findings Concerning Target and Comparison Groups

Most of the findings in the assessment of target and comparison groups are discouraging. On the positive side, we can define at least one reasonable target and control group pair – young adults who had disabilities and were parents when first observed and young adults with disabilities who were not parents. These groups have a reasonable number of observations in SIPP, especially if

[199] Includes children from families that were interviewed in the first wave of the 1990, 1991, 1992, or 1993 SIPP Panels. Characteristics are not weighted. Income is based on amount reported in January of each panel.

[200] Based on household size at first interview.

[201] The Census defines a "family" as a group of two or more persons (one of who is the "householder") related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.

[202] There are two definitions of disabilities used based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work.

one were to combine the female and male groups. The comparison would be imperfect because of differences in characteristics for the two groups, although it could be improved through the use of multivariate methods.

Unfortunately, use of these groups alone would miss many people who are targets of the welfare reform and who might apply for SSI. The analysis shows that a large share of those who applied for SSI after they were first observed and before July 31, 1996 did not self-report a disability or health condition. Among the 5,678 young mothers with no reported disability and with incomes below 150 percent of poverty, 182 later applied for SSI. While this is only 3.2 percent of the young mothers in this income group with no reported disabilities, it is about two-thirds of the young mothers who later applied. Thus, ignoring this group would miss a very large share of the young women whose SSI application behavior might be affected by TANF reforms.

One might define very low-income mothers without a disability as a second target group, and use very low income women without a disability who are not mothers for comparison. This is problematic, though, because the share of women in the former group whose SSI application behavior is likely to be affected by the TANF reforms is small, making it difficult to identify anything but a very large effect. Further, age, education, and other differences between the two groups are even greater than for the corresponding groups of young women with disabilities. It seems likely that many of the women in this comparison group would eventually become parents, making them possible targets of the TANF reforms.

Defining study and target groups for children is even more problematic, primarily because such a large share of those who did apply in recent years had no reported disability when observed in SIPP.

We conclude that defining deterministic target and comparison groups is quite problematic. While it might be reasonable to make comparisons between low-income parents with disabilities and non-parents with disabilities, this would ignore a substantial share of those targeted by TANF reforms that might apply for SSI. When we consider all low-income parents vs. non-parents, we run into the problem that many of those in the latter group will eventually become parents, and thereby enter the group targeted by TANF reforms.

VI. HAZARD ANALYSIS OF SSI APPLICATIONS AND ALLOWANCES, 1990-1996

A. Specifications for Young Women and Young Men

1. Econometric Model

We use a discrete time logit model to estimate SSI application and allowance hazard rates. This model is represented by the following equation:

$$ln\,[P_{id}/(1-P_{id})] = \alpha_d + \beta' X_i + \delta' Z_{id}$$

Where:

- *ln*[.] is the natural log operator;

- P_{id} represents the conditional probability that individual *i* applies for SSI benefits, or receives an allowance, in period *d* after he or she is first observed in SIPP;
- α_d is the "duration effect" at duration *d*. This set of parameters allows for a shift in the hazard at each duration, and each can be thought of as a duration-specific intercept;
- X_i is a (column) vector of explanatory variables that do not vary with duration. In this application, they represent characteristics of the individual when first observed in SIPP;
- β is a vector of coefficients for the Xs;
- Z_{id} is a vector of variables that vary with duration. In this application, they can be specific to the individual, or the individual's state of residence when observed; and
- δ is a vector of coefficients for the Zs.

The left-hand side of the equation is sometimes referred to as the "log-odds ratio" or the "logit" of the hazard rate. The odds-ratio itself is $P_{id}/(1-P_{id})$.

It is important to keep in mind that duration is measured from the point that an individual is first observed in SIPP. Because four SIPP panels are pooled for the analysis, this means that duration does not coincide with calendar time (e.g., 1995 is the third year of duration for the 1993 SIPP panel and the sixth year for the 1990 panel). Some of the duration-varying variables that are used in the analysis are, however, linked to calendar time.

The coefficients of the explanatory variables represent the effects of the variables on the log-odds ratio. Customary practice is to exponentiate each coefficient, to obtain estimates of the proportional shift in the odds ratio associated with a unit change in the explanatory variable, holding other factors constant. For example, if the coefficient on a dummy variable called "disability" in an application equation is 2.0, the exponentiated value is 7.4, meaning that the odds of application are 7.4 times greater for a person with a disability than for a person without a disability, other things constant.

It is important to understand that the proportional effect of a unit change in a variable on the odds ratio is *not* the proportional effect on the conditional probability itself. The size of the effect on the conditional probability depends on the value of the odds-ratio before the unit change. We illustrate this with the hypothetical disability coefficient example in the previous paragraph. Suppose, first, that the odds-ratio for the person without a disability is 0.010 (1 to 100 odds of applying). The exponentiated value of the disability coefficient in the example, 7.4, implies that the odds for a person with a disability who is otherwise identical would be 0.074 (7.4 times higher than for a person without a disability). The conditional probability of application (i.e., hazard) for the person without a disability would be 1.0/101.0 (.010, or 1.0 percent), while that for the person with a disability would be 7.4/107.4 (.069, or 6.9 percent). Thus, given the assumption about the hazard for the persons without a disability, the change in the hazard associated with "disability" would be .059, or 5.9 percentage points. Suppose, instead, that the odds-ratio for the person without a disability is 0.02. Then the odds-ratio for the person with a disability would be .148 (7.4 x .02). The hazards for the two individuals would be .020 (.020/1.020) and .129 (.148/1.148), respectively, and the difference in the hazard rates would be .109 (10.9 percentage points). This is much larger than the 5.9 percentage point effect obtained when the odds-ratio for the person without a disability is .010.

Because estimated effects on hazards depend on the initial value of the hazard, in most instances we consider only the proportional effect on the odds ratio. In some cases, however, the effect on the probability for a person with specified characteristics is of interest. In such cases, we specify those characteristics.

2. Sample

The sample for each adult application model consists of all SIPP respondents in the relevant demographic group (women age 18 to 40 or men age 18 to 40) who had never filed an application for SSI at the time they were first observed in SIPP, and whose family incomes were below 400 percent of poverty in the month they were first observed. A small number of these respondents were excluded from the analysis for other reasons, to be discussed later. The sample for each allowance model is defined analogously. Some respondents used in the allowance analysis were excluded from the application analysis because their first SSI application was filed before they were observed in SIPP.[203]

We chose the 400 percent of poverty threshold based on our findings for post-SIPP SSI applicants and recipients in the descriptive analysis. A lower poverty threshold, such as 150 percent of poverty, would exclude a large share of new applicants or awardees.[204]

For each SIPP respondent in the sample we follow applications and allowances from the time they are first observed in SIPP until July 1996. While actual observations are monthly, we use only annual observations because the number of applications or allowances to respondents in each month is very small. The additional computational time required to estimate monthly models also made monthly analysis impractical.[205] We treat the first seven months of 1996 as a full year in the analysis, which affects the last four duration coefficients and possibly the panel dummies, but has no important implications for other coefficients.[206] The observation period for the analysis varies by SIPP panel: from 1990 to (July) 1996 for the 1990 SIPP panel; from 1991 to 1996 for the 1991 SIPP panel; from 1992 to 1996 for the 1992 SIPP panel; and from 1993 to 1996 for the 1993 SIPP panel.

For each respondent in the sample, there is one observation for each year from the first year that he or she is observed in SIPP up to and including the year in which he or she files an application or obtains an allowance. Thus, an observation is a "person-year," and the sample size is the number of person-years.

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[203] The matched data provide date of first application only. An applicant who is denied benefits may reapply and receive benefits at a later date.

[204] In our descriptive analysis, we found that over 30 percent of those filing their first application or receiving their first benefits in the five years after they were first observed in SIPP had family income above 150 percent of poverty.

[205] A quarterly analysis might be feasible and perhaps should be considered further if the timing of a specific reform is critical to an analysis.

[206] This affects the duration coefficients for durations of four to seven years, because 1996 is year four for the 1993 panel, year five for the 1994 panel, etc. An equivalent specification would be to replace the duration dummies with year dummies. This would have no effect on other coefficients because year is the sum of the panel year and duration. In this equivalent specification, the 1996 dummy coefficient would be reduced by the use of seven months of data only.

We exclude respondents in certain states in our models, for two reasons. First, some smaller states are grouped together in the SIPP, making it impossible for us to assign state-level variables to respondents from these states.[207] All of these states are small, so very few respondents who filed their first application or received their first allowance during the observation period are dropped. Second, a few additional states had no SIPP respondents who filed a first application or received a first allowance during the observation period.[208] We excluded all respondents from these states because we included state dummy variables in the explanatory variables (i.e., state "fixed effects," which are discussed further below); estimates of the dummy coefficients for states with no applicants/allowances are unbounded.[209]

3. Dependent Variables

For each respondent, we generate a value for the dependent variable in each year, up to and including the year in which he or she first apply (application models) or receives an allowance (allowance models), or 1996, whichever comes first. The variable is dichotomous, and is assigned a value of one in a year when the person applies for benefits (application models) or receives an allowance (allowance model), and is zero otherwise.

4. Explanatory Variables included in All Adult Models

A summary of all the explanatory variables used in the econometric analysis for adults appears in ***Exhibit 5.10*****.** All of these models include three general categories of explanatory variables:

- Duration and Panel Variables;
- SIPP Variables; and
- State Variables.

We describe these categories of explanatory variables below.

[207] The grouped states include Maine, Vermont, Iowa, North Dakota, South Dakota, Alaska, Idaho, Montana, and Wyoming.

[208] For the application models for women, we dropped Connecticut, Delaware, Hawaii, and Rhode Island. For the allowance models for women, we dropped Connecticut, Hawaii, Nevada, and New Jersey. For the application models for men, we dropped West Virginia. For the allowance models for men, we dropped Connecticut, Hawaii, Kansas, and New Hampshire.

[209] Intuitively, an infinitely large, negative fixed effect can "explain" why no respondent in a state applies or receives an allowance.

Exhibit 5.10
Description of Explanatory Variables for Econometric Analysis

Duration and Panel Variables	**Description**
Duration Intercepts	Seven dummy variables, one for each year of duration after the first SIPP interview.
1990-1992 SIPP Panel Indicators	Dummy variables, each equaling one for individuals who are members of the specified SIPP Panel and zero otherwise (1993 Panel is the omitted category).
SIPP Variables	**Description**
Age	Age is adjusted in every panel to reflect the person's age as of January 1990.[210]
Race: Hispanic Black	 A dummy variable equal to one for an individual whose ethnicity is Hispanic, zero otherwise. A dummy variable equaling one for an individual whose race is black (non-Hispanic), zero otherwise. (The omitted category is white)
Education: No high school diploma High school diploma only Some College	 A dummy variable equaling one for an individual with no high school diploma, zero otherwise. A dummy variable equaling one for an individual with only a high school diploma, zero otherwise. A dummy variable equaling one for an individual with some college education, zero otherwise.[211]
Student:	A dummy variable equaling one if an individual is a student, zero otherwise.
Children in the family	A dummy variable equaling one if there are children under the age of 18 in the family, zero otherwise.
Age of youngest child	A dummy variable that indicates the youngest child in the family is under the age of 18. Unlike the other SIPP variables, this variable is updated over time.
Other adult in the family	A dummy variable equaling one for an individual who lives in a family with another adult, zero otherwise.
Marital Status: Married Divorced/Widowed	 A dummy variable equaling one if an individual is married, zero otherwise. A dummy variable equaling one in an individual is divorced or widowed, zero otherwise. (The omitted category is never married)
Severe Disability:	A dummy variable equaling one if the person has a severe disability, zero otherwise.

[210] This means that age is the same for all persons in a birth cohort. If we measured age at time of observation in SIPP, respondents in the same birth cohort but different SIPP panels would have different ages. The effect would be to shift the panel dummy coefficients. There would be no effect on the age coefficient.

[211] The omitted education status category includes those who have received at least a college diploma.

Exhibit 5.10 (continued)
Description of Explanatory Variables for Econometric Analysis

SIPP Variables	Description
Any Disability	A dummy variable equaling one if the person is disabled, but not severely so, zero otherwise.[212]
Missing Disability Information	A dummy variable equaling one if the individual is missing disability information due to sample attrition, zero otherwise. [213] (The omitted category is no reported disability)
Health Status: Poor health status Fair health status Good health status	 A dummy variable equaling one if the person's self reported health status is poor, zero otherwise. A dummy variable equaling one if the person's self reported health status is fair, zero otherwise. A dummy variable equaling one if the person's self reported health status is good, zero otherwise; (The omitted category is very good/excellent health status)
AFDC	A dummy variable equaling one for an individual who lives in a family that received AFDC benefits at the first SIPP interview, zero otherwise.
AFDC History	A dummy variable equaling one for an individual who lives in a family that received AFDC benefits at the first SIPP interview or in prior years, zero otherwise.
Food Stamps	A dummy variable equaling one for an individual who receives Food Stamps, zero otherwise.
Food Stamps History	A dummy variable equaling one for an individual who has received Food Stamps at the first interview or in prior years, zero otherwise.
Family Income as a percent of poverty	Equal to the family's January income of the panel year as a percent of poverty.
Personal Earnings	Equal to the individual's earnings in January of the panel year.
Personal Income	Equal to the individual's income in January of the panel year.
State Fixed Effects	A dummy variable equaling one if the individual resides in that state, zero otherwise.[214]
General Assistance (GA) Variables: GA cuts per capita Lag of GA cuts per capita	 When a GA cut or increase occurs in a state because of a major program or policy change, we measure the size of the cut per capita as the difference between the average monthly GA caseload in the three months following the quarter in which the change occurred and in the three months preceding that quarter, divided by the state's population. The first lag of the GA cuts described above.
SSI Benefit Amount	The annual maximum SSI Benefit amount in the respondent's state for an individual including any supplement (1990 dollars).

[212] Includes individuals who report a limitation in kind or amount of work or housework they can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; has a disabling mental or emotional condition.

[213] The omitted disability status category includes those who reported that they had no disability.

[214] The omitted state is West Virginia. Also, additional states were omitted from certain models because of zero cell sizes or because they were not individual identified in the SIPP.

Exhibit 5.10 (continued)
Description of Explanatory Variables for Econometric Analysis

State Program and Economic Variables	Description
1. AFDC Variables: Maximum Monthly AFDC Benefit	1. MMB is the typical maximum AFDC benefit for a three-person family during the first quarter plus the value of Food Stamps for a family receiving that benefit, deflated by the regional CPI-U.[215] If a state changes its nominal AFDC payment rate during the quarter, we use the average rate applicable over the three months.[216] This annual variable is set equal to the value from the first quarter of each year (1990 dollars).
2. Average Tax and Benefit Reduction Rate:	2. The average tax and benefit reduction rate (ATBRR) is the average rate at which disposable income is reduced per each dollar of income, earned or unearned, between zero earnings and the AFDC "earnings cut-off" -- the highest level of gross earnings that a family of three can have and still receive some benefit. Formally: ATBRR = 1 - (Y - MMB)/E, where Y is disposable income at the earnings cut-off, and E is the AFDC earnings cut-off. We define disposable income as the sum of earnings, the Earned Income Tax Credit (EITC), AFDC benefits, and Food Stamp benefits, less FICA, where the AFDC benefit is calculated using the earnings disregard for a family that has received AFDC benefits for more than 12 months. ATBRR is an annual variable equal to the value from the first quarter of each year in each state (1990 dollars).
Unemployment Rate: 1. Unemployment Rate 2. Lag of Unemployment Rate: 3. Second Lag of Unemployment Rate:	 1. The annual rate of unemployment in each state. 2. The one year lag of the unemployment rate in each state. 3. The two year lag of the employment rate in each state.
State Waiver Variables: 1. California Waiver 2. Massachusetts Waiver: 3. Michigan Waiver 4. Wisconsin Waiver	 1. This variable is one in 1994, 1995 and 1996 for sample members who live in California, and zero otherwise. 2. This variable is one in 1996 for sample members who live in Massachusetts, and zero otherwise. 3. This variable is one in 1995 and 1996 for sample members who live in Michigan, and zero otherwise. 4. This variable is one in 1994, 1995, and 1996 for sample members who live in Wisconsin, and zero otherwise.

[215] A given family's maximum AFDC benefit may differ from the state's "typical" benefit as calculated by the ACF due to factors such as: locality, housing arrangements, family composition, or special needs.

[216] We use several data types and sources to create the MMB variable. For years prior to 1995, we use ACF provided state-level typical maximum monthly payment (MAXPAY) data for a family of three. We obtained maximum monthly Food Stamp benefit and standard deduction data by quarter from the Program Reports and Analysis Branch, USDA. The Food Stamp benefit for a three-person family receiving the typical maximum AFDC benefit is equal to the maximum Food Stamp benefit for a three-person family less 30 percent of the difference between MAXPAY and the Food Stamp standard deduction.

Duration and Panel Variables

The duration variables are dummy variables for the duration–specific intercepts (i.e., α_d). There are seven of these variables.[217] Increases in the intercepts with duration mean that the odds of applying, conditional on not having applied previously, increase with time since the person was observed in SIPP, and vice versa.[218] The panel variables are also dummy variables – one for each of the four SIPP panels. They control for the fact that both selection into the estimation sample and the characteristics of a respondent when first observed in SIPP may depend on when the respondent is first observed. They may also capture panel differences in the SIPP sampling methodologies, especially over sampling of the low-income population in the 1990 SIPP.

We initially experimented with interacting the SIPP panel dummies with the duration dummies in the application models for young women; i.e., allowing a different set of duration dummies for each SIPP panel. This was computationally burdensome, and we also could not reject the null hypothesis of identical duration dummy coefficients for all four panels, using a likelihood ratio test. We later discovered, and corrected, an error in the application data, but did not conduct this test again because of the computational burden.[219]

We did not include year dummies in any of the models because they are exactly collinear with duration and panel dummies. Specifically, the year associated with a person-year observation is a deterministic. It is the sum of the person's panel year and the duration associated with the observation. This needs to be kept in mind when interpreting the coefficients because "duration" effects are confounded with "year" effects, and cannot be separated because of the exact colinearity.

SIPP Variables

The SIPP variables are characteristics of individuals during their first interview, and correspond to variables for which we presented descriptive statistics in the previous chapter. It needs to be kept in mind that these variables refer to the respondents' circumstances at the time they were first observed in SIPP, *not* at the time they applied for or received an allowance. In fact, post-SIPP changes in some characteristics (e.g., disability, health status, marital status, and children) may trigger an application. With one exception, we treat future changes in these characteristics as random disturbances, conditioned on respondent characteristics when observed, because we are not able to observe them.

The exception is a dummy variable for a presence of an own child under of the age of 18, a requirement for AFDC eligibility. We first observe this variable in SIPP, and if a child under age 18 is present we "age" the youngest child in later years to determine the presence of a child

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[217] The values for the fifth, sixth and seventh duration coefficients are based diminishing subsamples of the full sample because the number of years in the observation period for each SIPP is inversely related to the first year of the SIPP's panel.

[218] The use of discrete dummies for the duration allows for any form of duration dependence.

[219] Convergence is slow when duration is interacted with panel, evidently because the number of applicants at some durations from some panels is very small. In this model, it is necessary to exclude interactions for durations of seven years for the 1991 panel, six or more years for the 1992 panel, and five or more years for the 1993 panel.

under age 18 in later years, thus creating a time-varying explanatory variable. This measure is imperfect, because new children may be born or a child may leave the respondent before the child reaches age 18 (e.g., via divorce).

The number of characteristic variables in the models is large. While most have significant coefficients, many do not. We have not conducted a specification search to winnow out insignificant variables, for the practical reason that producing the estimates for each specification requires considerable effort and our resources are limited.[220] A stepwise approach to determining the included explanatory variables might well have produced more significant coefficients on fewer variables as exclusion of insignificant variables would reduce multicollinearity, although the test statistics themselves would suffer from pre-test bias.

State Variables

The state variables include a set of dummies for factors that are unique to individual states -- state fixed effects. These are based on the individual's state of residence when observed in SIPP, which, like many other individual characteristics, may change before application or allowance occurs.

We have not tried models without fixed state effects, in part because we think that cross-stock, co-variation is between dependent variables and the other state variables will reflect relationships other than the causal relationships we are interested in, and in part because of the effort involved.

We also include a small number of state program and economic variables to capture the effects of changes in state policy and the strength of a state's economy. These variables are all time varying. Only the time variation in these variables influences the estimated coefficients because the state fixed effects eliminate the influence of cross-state variation.[221] We assign these state variables to respondents based on the state they were living in during their first interview. It is possible that some individuals will have moved since their first SIPP interview to another state. For these individuals, the state variables will be measured with error. These variables include: the unemployment rate; a measure of reductions in state general assistance programs resulting from state policy changes; the state's maximum monthly AFDC benefit for a family of three; and the average tax and benefit reduction rate for an AFDC family of three. Reflecting our past experience with pooled time-series models for SSI participation, we included the lagged values of the GA and unemployment variables as well as the current values.[222]

Finally, as a test of whether the effects of reforms in individual states could be detected in this type of an analysis, we included dummy variables for four states that implemented significant

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[220] The effort required is partly due to computational requirements, but also due to necessary limitations on access to SSA's data.

[221] This specification is analogous to the specification for the pooled time-series analysis of state-level data presented earlier in this report. For that model, we estimated relationships between changes in variables to eliminate the state fixed effects.

[222] This specification was selected prior to the completion of the pooled time-series analysis of state-level data that is presented earlier in this report. The findings from that analysis suggest we should replace the unemployment variable with variables for trade employment per capita and the labor force participation rate, and drop the other variables, with the exception of the GA variable.

AFDC reforms with TANF-like features prior to PRWORA (California, Massachusetts, Michigan, and Wisconsin). These are specified in a very simple way – a permanent change from zero to one in the year in which the reform is first implemented. We chose this simple specification in anticipation of a small number of transitions in each state. The dummy coefficients represent the average annual effect in the post-reform years. Positive, statistically significant coefficients on the latter would be evidence that reforms in these states have already had an impact on SSI applications and/or allowances. Insignificant coefficients, however, might simply reflect high sampling error because of the small number of applications or allowances in the sample for each state.

5. Other Explanatory Variables

We also experiment with models in which dummy variables for each calendar year after the first calendar year interact with variables that identify individuals whose applications and allowances are more likely than others to be affected by factors that also affect AFDC participation, including AFDC reforms. These models allow us to assess whether there were shifts in the hazards for such individuals during the pre-reform period relative to hazards for others – a phenomenon that is suggested by the analysis in the two previous chapters.

The first variable interacted with the year variables is an estimated "AFDC participation probability." To create this variable, we first estimate a linear probability model of AFDC participation for young women and men. The dependent variable in these models is equal to one if the individual receives AFDC during the first SIPP interview, and zero otherwise. For the explanatory variables, we use a subset of the variables from the application and allowance models. We selected variables that seemed likely to be exogenous to AFDC participation and, therefore, insensitive to whether or not the individual participated in AFDC when first observed in SIPP. For the adult models, these variables include severe disability, any disability, disability missing, age, married, black, Hispanic, non-white, no high school diploma, high school diploma only, some college, other adult in the family, and age of youngest child. The results from the AFDC linear probability models for young men and women are present in ***Appendix Exhibit E.11***.

Positive coefficients on the interactions of the year dummies with these variables for 1991 through 1996 would indicate an upward shift in the hazards for "likely" AFDC recipients relative to the hazards for "unlikely" AFDC recipients over the period. In interpreting the coefficients, it is important to keep in mind that we are assessing shifts from the hazards for 1990. We cannot identify shifts in 1990 from earlier years because of a lack of data from earlier years. We would expect the shifts to be largest in 1991 through 1994, a period of very high application rates (see Chapter I). Differences between the hazards for likely and unlikely AFDC recipients in 1990 are captured in the basic set of explanatory variables.

For our second specification, we interact a dummy for the presence of own children under the age of 18 with each year dummy (1991 to 1996).[223] Positive coefficients on these interactions would indicate an upward shift in the hazards for low-income parents who are living with their minor children relative to others.

[223] The base period for the two interaction terms described above is 1990.

We also considered, but did not estimate, a third model of this sort – with interactions between an AFDC dummy variable and each of the year dummies for 1991 to 1996. We decided that we preferred the probabilistic AFDC specification to this deterministic one because we suspect that there are many respondents who are candidates for AFDC participation, but who did not happen to be participating in AFDC at the time we observed them in SIPP. Further, an important feature of the implementation of TANF in many states is vigorous efforts to divert families from entering TANF. Presumably, many of the families who would be diverted were near the margin of participating in AFDC when we observed them in SIPP, but were not participating. The probabilistic specification explicitly recognizes that we cannot cleanly divide the population into AFDC and non-AFDC groups based on a single monthly observation.

B. Results from Adult SSI Application and Allowance Models

1. Young Women

Applications

We used data for 35,640 SIPP respondents in estimating the applicant models for young women (***Exhibit 5.11***), of whom 545 applied for SSI after they were first observed in SIPP and before August 1996. There are 134,971 person-year observations.

The following discussion of the coefficients for the duration and panel dummies, the characteristics observed at the first SIPP interview, and the state variables focuses on the coefficients for the first of the three models estimated (Model 1). Yet, all the coefficients of these variables are remarkably stable across the three models, with one exception – the coefficient of the children in family variable changes when that variable is interacted with year dummies for 1991 through 1996 (Model 3). The discussion of the coefficients for the first three sets of variables is followed by a discussion of the coefficients of the interactions between the AFDC probability and year (Model 2), and between children in family and year (Model 3).

Duration and Panel Effects

We find no statistically significant shifts of the application hazard rate with duration. The duration coefficients gradually increase from the first year after observation through the sixth. This suggests that a more restrictive specification (e.g., a linear trend in the duration coefficients) might have yielded a statistically significant result. While this could reflect a gradual increase in the hazard with time since observation in SIPP, it might also reflect shifts in the hazard over the sample period. We find that the hazard rates for the 1990, 1991, and 1992 SIPP panels are lower than for the 1994 panel, holding other variables constant; however, the difference is only significant in 1991, and only at the .10 level. There is no obvious explanation of this pattern.

Respondent Characteristics Observed in the First SIPP Interview

Our next set of coefficients is for the respondents' characteristics when first observed in SIPP. We find that the coefficients on age, each level of schooling below college completion (college completion is the base), severe disability, any disability, missing disability information, good, fair or poor health (compared to very good or excellent), divorced/widowed (compared to never

married), past AFDC recipient, and present Food Stamp recipient are all positive and significant at the .10 level or higher.[224] The coefficients on the variables for Hispanic ethnicity, current student, children in family, and family income as a percent of poverty are all negative and significant. While in most cases the signs of these significant coefficients seem intuitively correct, it must be kept in mind that they represent the association between the explanatory variable and the application hazard holding the other explanatory variables constant. Thus, for instance, the negative coefficient on the children in family variable represents the association between having a child in the family and the application hazard holding constant AFDC participation, as well as many other variables that may vary with the presence of children in the family.

The largest point estimates in our model are the coefficients for the disability and health status variables. For a person with a severe disability, the odds of applying are 2.5 times higher than those for a person without a severe disability, holding other things constant (including any disability and health). The odds of applying, for a person who reported a severe disability and poor health, are 15 times higher than those for a person who reports no disability and very good or excellent health.[225] This represents an increase in the overall probability of application from 0.4 percent to 5.8 percent.[226] It is interesting to note that the coefficient on the missing disability variable was also positive and significant. This indicates that attrition from SIPP is greater for SSI applicants than non-applicants, holding other things constant.

We also find a large, positive, and significant coefficient on the past AFDC recipiency variable. The odds of applying for past AFDC recipients are 2.4 times higher than those for others. These results are consistent with the patterns observed in the descriptive analysis for transitions from AFDC to SSI. In interpreting this result, it is important to remember that several other variables that are correlated with AFDC participation in this population are being held constant (e.g., has children in family, received Food Stamps, and family income as a percent of poverty). This finding indicates that, after holding these correlates of AFDC participation constant, there are unobserved characteristics of past AFDC recipients that make them more likely to apply for SSI. We also find that the current AFDC recipiency variable's coefficient is not statistically significant, but note that all current AFDC recipients are also past recipients, by definition, so the coefficient of the current recipiency variable is picking up any difference between the effect of past and current recipiency, which appears to be small.

Effects of State-level Factors

While we do not report the results in ***Exhibit 5.11***, we find statistically significant variation in the individual state fixed effects. In ***Exhibit 5.12***, we report the odds ratios corresponding to the state fixed effects in the application model. The odds ratios are the odds of applying for individuals who live in each state relative to those who live in West Virginia, other things constant.[227] We find that the largest effects are in South Carolina and Mississippi. The odds of

[224] A two-tailed test is used.

[225] The combined odds were calculated exponentiating the sum of the coefficients from each of these variables (0.94 + 0.67 +1.09).

[226] This percentage is based on probabilities evaluated at the mean values of all explanatory variables.

[227] West Virginia is the excluded state in the specification and, serendipitously, had the lowest odds ratio, other things constant.

applying for a respondent living in either one of these states were over ten times the odds for a respondent living in West Virginia, other things constant. We also find that the odds of applying are generally higher in states in southern regions, relative to those from other regions. For example, of the nine states that had significantly higher odds of application than West Virginia, eight were in the south (Alabama, Arkansas, Florida, Georgia, Kentucky, Mississippi, North Carolina, and South Carolina). In all of these states, the relative odds of applying were at least four times those for West Virginia. Hence, there seems to be a strong regional component to applications from young women during the pre-reform period, other things constant

We find that while most of the coefficients of the state program and economic variables had the expected sign, they were all very insignificant. This likely reflects the small number of applications in the sample from each state in each year and the high level of unexplained variation in the application decisions of individuals. Recall, too, that the inclusion of state fixed effects means that estimation of these coefficients is relying entirely on time-series co-variation between the variables and applications. Omission of the state fixed effects would likely change the results substantially, but as mentioned previously we would be quite uncertain about the interpretation of the coefficients. We also discovered an error in the coding of the GA cuts variable that has not been corrected in the results presented here and that may explain the insignificant coefficients – the very large cuts in Michigan due to the essential termination of Michigan's program in 1991 were miscoded as occurring in 1992. It may be possible to obtain stronger results by correcting this error, as well as by using alternative specifications of the state variables that incorporate what we have learned from the state-level analysis reported earlier, but we do not expect substantial improvement.

It should also be noted that the coefficient of one variable, the average tax and benefit reduction rate (ATBRR) is quite large, despite its insignificance. Most of the time-series variation in this variable is common across states, because during this period expansion of the Earned Income Tax Credit substantially reduced the ATBRR in all states. We suspect, therefore, that the large coefficient reflects high collinearity with the duration and panel dummies.

None of the coefficients for the specific state welfare reform dummy variables is statistically significant, and three of the four are negative. The one coefficient that is positive, for Massachusetts, is also the largest in magnitude (relative odds ratio of 2.4) and has the highest t-statistic (1.6). This is somewhat surprising given the small size of this state relative to the other three states for which we included welfare reform dummies (California, Michigan, and Wisconsin). Alternative specifications (including correction of the error in the GA variable for Michigan) might yield more significant findings, but the sample sizes involved and the findings from the administrative data analysis suggest there would be no significant payoff to pursuing such specifications.

Time Interactions

The coefficients of the interactions between the AFDC participation probability and the year dummies for 1991 to 1995 are all positive, but not statistically significant. The coefficient for the 1996 interaction is negative and insignificant. We were also unable to reject the null hypothesis that all the coefficients of these interactions are zero.

Despite the insignificance of individual coefficients, as well as the set of coefficients, the pattern of the coefficients, along with what we know from analysis of administrative data, does suggest

that the coefficients reflect something beyond sampling error. It may be that a more restrictive specification (e.g. fitting these coefficients to a quadratic equation) would have yielded stronger evidence of a shift. The coefficients gradually increase through 1994, and then decline through 1996. The t-statistic for the 1994 coefficient is 1.3, and the odds ratio derived from the coefficient's point estimate is 4.6. The interpretation of the latter figure is difficult to understand because it involves a ratio of ratios. The point estimate implies that, in 1994, the odds ratio for a respondent with an AFDC probability of 1.0 divided by the odds ratio for a respondent with an AFDC probability of 0.0 was 4.6 times larger than in 1990, holding other things constant. Thus, the finding is consistent with the hypothesis that, for young women, there was a shift in participation of "likely" AFDC participants from AFDC to SSI during this period, after holding the characteristics observed in SIPP constant.

A similar pattern is found for the coefficients of the interactions between the dummy for children in family and the dummies for 1991 through 1996. All of the coefficients are positive, but only one (for 1992) is statistically significant (at the .10 level only), and the likelihood ratio test cannot reject the null hypothesis that all are zero. Again, it may be that a more restrictive specification would have yield statistically significant evidence of shifts in the relative hazard for young women with children. The 1992 coefficient is the largest coefficient. The associated relative odds ratio is 2.1. This point estimate is interpreted as follows: in 1992 the odds ratio for applications from young mothers relative to the odds ratio for other young women, was 2.1 times as large as it was in 1990. This might reflect a *Zebley* spillover effect among young mothers, as has often been speculated.

We also find that the coefficient for children in family when first observed in SIPP is much greater in magnitude than in Models 1 and 2 (-1.07 in Model 3 vs. –0.62 in both of the other models). The apparent reason for this is that the coefficients in Models 1 and 2 represent seven-year averages of the annual coefficients for this variable, which are less negative after 1990 than in 1991.

While we do not report the results, we also tested additional specifications that included state waiver variables interacted with variables added to the second and third models. These interaction terms were designed to measure any additional effect of being in a target group and living in a state that had a waiver. We created one interaction term each for California, Massachusetts, Michigan, and Wisconsin. The coefficients of all of these terms were very insignificant, which is not very surprising given the sample sizes for each state and the insignificant findings for state variables in the models reported here.

Exhibit 5.11
Hazard Model Estimates for Young Women: First Applications.[228]

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables						
Duration Hazards						
Period 1	-9.60	0.49	-7.57	0.46	-6.71	0.50
Period 2	-9.34	0.64	-7.36	0.57	-6.49	0.62
Period 3	-9.30	0.66	-7.33	0.59	-6.53	0.60
Period 4	-9.15	0.77	-7.15	0.71	-6.31	0.74
Period 5	-9.02	0.87	-7.05	0.78	-6.22	0.82
Period 6	-8.83	1.07	-6.83	0.97	-6.07	0.95
Period 7	-8.89	0.00	-6.80	0.00	-6.02	0.00
1990 SIPP panel member	-0.11	0.89	-0.12	0.89	-0.08	
	(-0.38)		(-0.38)		(-0.24)	0.93
1991 SIPP panel member	-0.42*		-0.42*		-0.40	
	(-1.79)	0.66	(-1.67)	0.66	(-1.56)	0.67
1992 SIPP panel member	-0.21		-0.20		-0.22	0.80
	(-1.26)	0.81	(-1.16)	0.82	(-1.26)	
Age as of January 1993	0.02*		0.02*		0.02*	
	(2.50)	1.02	(2.22)	1.02	(2.50)	1.02
Hispanic	-0.25*		-0.27*		-0.25*	
	(-1.77)	0.78	(-1.88)	0.76	(-1.77)	0.78
Black	0.10		0.03		0.10	
	(0.85)	1.10	(0.21)	1.03	(0.85)	1.10
No High School Diploma	0.83*		0.75*		0.83*	
	(3.37)	2.30	(2.80)	2.13	(3.37)	2.30
High School Diploma	0.58*		0.56*		0.57*	
Only	(2.42)	1.78	(2.32)	1.76	(2.38)	1.78
Some College	0.54*		0.54*		0.54*	
	(2.16)	1.71	(2.16)	1.72	(2.16)	1.71
Student	-0.35*		-0.35*		-0.35*	
	(-2.32)	0.70	(-2.32)	0.71	(-2.32)	0.70
Has a Severe Disability	0.94*		0.91*		0.94*	
	(7.07)	2.57	(6.50)	2.49	(7.07)	2.57
Has a Disability	0.67*		0.66*		0.67*	
	(3.81)	1.95	(3.73)	1.94	(3.81)	1.95
Missing information on	0.90*		0.91*		0.90*	
Disability	(6.38)	2.45	(6.45)	2.48	(6.38)	2.45
Reports to be in good	0.53*		0.54*		0.54*	
health	(4.27)	1.71	(4.35)	1.71	(4.35)	1.71
Reports to be in fair	0.98*		0.98*		0.98*	
health	(6.41)	2.66	(6.41)	2.66	(6.41)	2.66
Reports to be in poor	1.09*		1.09*		1.10*	
health	(5.05)	2.98	(5.05)	2.97	(5.09)	3.00

[228] For more information on the variables, see ***Exhibit 5.10.*** Values in parentheses are t-statistics. An asterisk(*) indicates significance at the ten percent level or better, using a two-tailed test. Most are also significant at the five percent level. We used the lower standard because of the exploratory nature of the analysis.

Exhibit 5.11 (continued)
Hazard Model Estimates for Young Women: First Applications

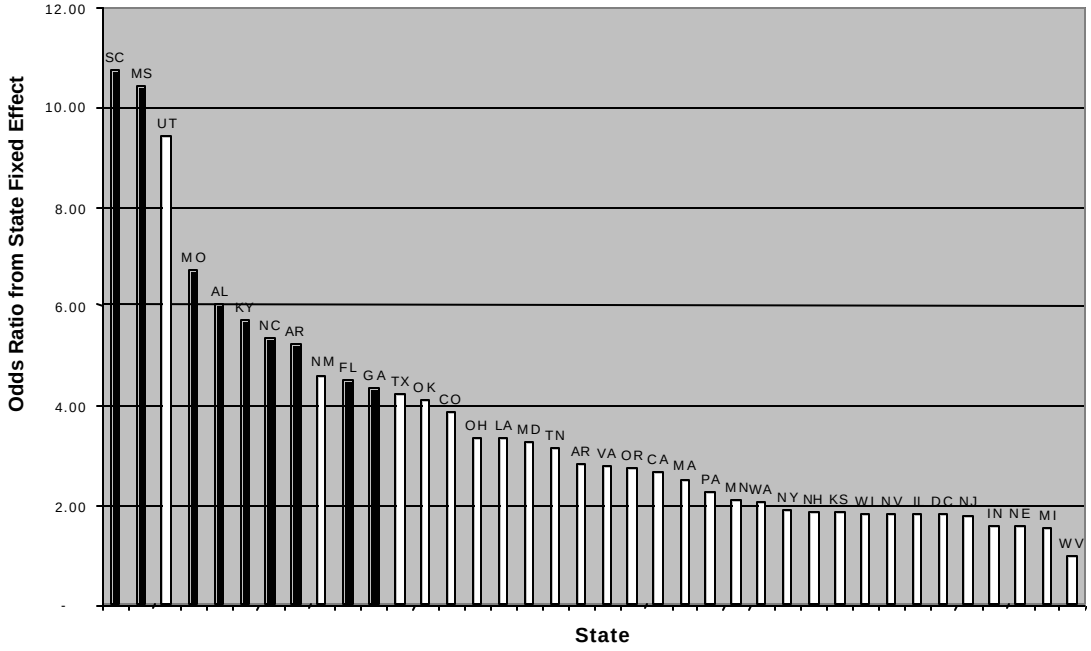
Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables						
Married	-0.05 (-0.34)	0.95	0.03 (0.17)	1.03	-0.05 (-0.34)	0.95
Divorced/ Widow	0.22* (1.76)	1.24	0.21* (1.68)	1.24	0.21* (1.68)	1.24
Children in Family	-0.62* (-4.77)	0.54	-0.74* (-3.66)	0.48	-1.09* (-3.04)	0.34
Age of Youngest Child	-0.23 (-0.75)	0.79	-0.28 (-0.89)	0.76	-0.23 (-0.75)	0.79
Other adult in the family	-0.04 (-0.34)	0.96	0.02 (0.14)	1.02	-0.04 (-0.34)	0.96
Receives AFDC	-0.23 (-1.38)	0.79	-0.23 (-1.38)	0.79	-0.23 (-1.38)	0.79
Received AFDC in previous periods	0.86* (5.66)	2.36	0.86* (5.66)	2.37	0.86* (5.66)	2.36
Receives Food Stamps	0.53* (2.88)	1.69	0.52* (2.83)	1.68	0.53* (2.88)	1.69
Received Food Stamps in Previous Periods	-0.04 (-0.24)	0.96	-0.04 (-0.24)	0.96	-0.04 (-0.24)	0.96
Family Income as a percent of poverty	-0.17* (-2.66)	0.85	-0.17* (-2.66)	0.85	-0.17* (-2.66)	0.85
Personal earnings (x 1,000)	-0.10 (-0.53)	0.90	-0.10 (-0.53)	0.91	-0.10 (-0.53)	0.90
Personal income (x 1,000)	-0.30 (-1.58)	0.74	-0.30 (-1.58)	0.74	-0.29 (-1.53)	0.75
State Fixed Effects	Y		Y		Y	
State Program and Economic Variables						
GA cuts per capita	0.00 (0.00)	1.00	0.00 (0.00)	1.00	0.02 (0.59)	1.02
Lag of GA cuts per capita	-0.02 (-0.67)	0.98	-0.02 (-0.65)	0.98	-0.03 (-0.97)	0.97
SSI Benefit Amount	0.00 (0.00)	1.00	0.00 (0.00)	1.00	-0.01 (-0.91)	0.99
Maximum Monthly AFDC Benefit	0.00 (0.00)	1.00	0.00 (0.00)	1.00	0.00 (0.00)	1.00
Average Tax/Benefit Reduction Rate	1.81 (1.10)	6.14	2.10 (1.16)	8.18	2.86 (1.57)	17.38
Unemployment Rate	-0.02 (-0.23)	0.98	-0.03 (-0.32)	0.97	-0.09 (-0.94)	0.92
Lag of Unemployment Rate	0.08 (0.96)	1.08	0.04 (0.45)	1.04	0.04 (0.45)	1.04

Exhibit 5.11 (continued)
Hazard Model Estimates for Young Women: First Applications

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables (continued)						
Second Lag of Unemployment Rate	0.04 (0.55)	1.04	-0.01 (-0.13)	0.99	0.02 (0.25)	1.02
California Welfare Reform (94,95,96)	-0.54 (-1.15)	0.58	-0.52 (-1.10)	0.59	-0.60 (-1.26)	0.55
Massachusetts Welfare Reform (95,96)	0.89 (1.55)	2.43	0.86 (1.49)	2.36	0.80 (1.38)	2.22
Michigan Welfare Reform (95,96)	-0.16 (-0.30)	0.86	-0.30 (-0.56)	0.74	-0.37 (-0.69)	0.69
Wisconsin Welfare Reform (94,95,96)	-0.38 (-0.41)	0.68	-0.48 (-0.52)	0.62	-0.45 (-0.49)	0.64
Year Interactions						
Probability of AFDC receipt * 1991	N/A	N/A	0.54 (0.44)	1.71	N/A	N/A
Probability of AFDC receipt * 1992	N/A	N/A	0.97 (0.78)	2.64	N/A	N/A
Probability of AFDC receipt * 1993	N/A	N/A	1.01 (0.84)	2.74	N/A	N/A
Probability of AFDC receipt * 1994	N/A	N/A	1.52 (1.28)	4.59	N/A	N/A
Probability of AFDC receipt * 1995	N/A	N/A	0.83 (0.68)	2.30	N/A	N/A
Probability of AFDC receipt * 1996	N/A	N/A	-0.45 (-0.33)	0.64	N/A	N/A
Children in family * 1991	N/A	N/A	N/A	N/A	0.26 (0.70)	1.29
Children in family * 1992	N/A	N/A	N/A	N/A	0.74* (1.94)	2.10
Children in family * 1993	N/A	N/A	N/A	N/A	0.42 (1.10)	1.52
Children in family * 1994	N/A	N/A	N/A	N/A	0.59 (1.55)	1.80
Children in family * 1995	N/A	N/A	N/A	N/A	0.60 (1.56)	1.83
Children in family * 1996	N/A	N/A	N/A	N/A	0.29 (0.76)	1.33
N	134,971	N/A	134,971	N/A	134,971	N/A
Applications	545	N/A	545	N/A	545	N/A
Log Likelihood	-3,146.30	N/A	-3,143.66	N/A	-3,142.37	N/A
Likelihood Ratio Test Statistic[229] (vs. Model 1)	N/A		5.34		7.86	
Degrees of Freedom	N/A		6		6	

[229] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

Exhibit 5.12
Odds Ratios from State Fixed Effects for Applications from Young Women[230]



Allowances

We used data for 35,640 SIPP respondents in estimating the allowance models for young women (***Exhibit 5.13***), of whom 313 received first SSI allowances after they were first observed in SIPP and before August 1996. There are 133,414 person-year observations.

Many of the coefficients in these allowance models are similar to the corresponding coefficients in the application models. To a first approximation, identical coefficients for an explanatory variable in the two models means that small changes in the variable have no appreciable impact on the allowance rate.[231] The following discussion focuses on variables whose coefficients are substantially different in the two models.

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[230] The black bars indicate that the state's fixed effect is significantly different from West Virginia at the 5 percent level

[231] This interpretation is an approximation for two reasons. First, equal changes in log-odds ratios for applications and allowances don't exactly translate into equal changes in (conditional) application and allowance probabilities, although for small changes the changes are very close. Consider the following illustration, which uses the formula: probability = odds/(1 + odds). Suppose the odds of application are initially 5.0 to 95.0 (5 percent probability) and the odds of allowance are initially 2.5 to 97.5 (2.5 percent probability), implying an allowance probability of 50 percent (2.5/5). The application and allowance odds ratios are, respectively, .05263 and .02564, and the log odds ratios are, respectively, -2.9445 and –3.6636. If we increase each by .01 (a one percent increase in the odds ratio), the probabilities of application and allowance increase to 5.047 and 2.524 percent, respectively, implying an allowance rate of 50.01 percent.

The second reason that the interpretation is an approximation is that the set of applications associated with the first allowances in the allowance model sample is not identical to the set of first applications in the sample for the application model. Although the intersection of these two sets is very large, differences between these sets could explain some of the differences in the application and allowance model coefficients.

Exhibit 5.13
Hazard Model Estimates for Young Women: First Allowances[232]

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables						
Duration Hazards						
Period 1	-16.82	1.01	-15.12	0.77	-15.42	1.09
Period 2	-16.73	1.11	-15.11	0.78	-15.50	1.00
Period 3	-16.62	1.23	-14.94	0.92	-15.41	1.09
Period 4	-16.47	1.44	-14.72	1.15	-15.18	1.38
Period 5	-16.59	1.27	-14.84	1.02	-15.37	1.14
Period 6	-16.97	0.87	-15.16	0.74	-15.80	0.74
Period 7	-16.83	0.00	-14.86	0.00	-15.50	0.00
1990 SIPP panel member	0.13	1.14	0.02	1.02	0.18	1.20
	(0.34)		(0.05)		(0.41)	
1991 SIPP panel member	0.02	1.02	-0.08	0.93	0.00	1.00
	(0.07)		(-0.25)		(0.00)	
1992 SIPP panel member	-0.30	0.74	-0.33	0.72	-0.31	0.73
	(-1.32)		(-1.40)		(-1.30)	
SIPP Variables						
Age as of January 1993	0.06*	1.06	0.06*	1.06	0.06*	1.06
	(5.45)		(5.00)		(5.45)	
Hispanic	-0.52*	0.59	-0.56*	0.57	-0.52*	0.59
	(-2.55)		(-2.71)		(-2.55)	
Black	0.07	1.07	0.00	1.00	0.07	1.07
	(0.45)		(0.00)		(0.45)	
No High School Diploma	1.13*	3.10	1.05*	2.86	1.13*	3.10
	(3.14)		(2.81)		(3.14)	
High School Diploma Only	0.78*	2.18	0.77*	2.15	0.78*	2.18
	(2.19)		(2.16)		(2.19)	
Some College	0.76*	2.13	0.76*	2.14	0.76*	2.13
	(2.07)		(2.07)		(2.07)	
Student	-0.48*	0.62	-0.46*	0.63	-0.48*	0.62
	(-2.22)		(-2.13)		(-2.22)	
Has a Severe Disability	1.46*	4.32	1.41*	4.10	1.46*	4.31
	(8.64)		(7.79)		(8.64)	
Has a Disability	0.88*	2.42	0.87*	2.40	0.88*	2.41
	(3.83)		(3.77)		(3.83)	

[232] For more information on the variables, see ***Exhibit 5.10***. Values in parentheses are t-statistics. An asterisk (*) indicates significance at the 10 percent level or better, using a two-tailed test.

Exhibit 5.13 (continued)
Hazard Model Estimates for Young Women: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)						
Missing Information on Disability	0.89* (4.32)	2.43	0.90* (4.35)	2.45	0.89* (4.32)	2.43
Reports to be in Good Health	0.52* (2.95)	1.68	0.52* (2.95)	1.68	0.52* (2.95)	1.68
Reports to be in Fair Health	0.96* (4.68)	2.62	0.95* (4.63)	2.59	0.96* (4.68)	2.61
Reports to be in Poor Health	1.45* (5.62)	4.25	1.45* (5.62)	4.26	1.45* (5.60)	4.27
Married	-0.30 (-1.59)	0.74	-0.21 (-0.89)	0.81	-0.31* (-1.64)	0.73
Divorced/Widow	-0.09 (-0.55)	0.91	-0.09 (-0.55)	0.91	-0.09 (-0.55)	0.91
Children in Family	-0.82* (-4.77)	0.44	-0.99* (-3.51)	0.37	-1.92* (-3.78)	0.15
Age of Youngest Child	-0.45 (-1.25)	0.64	-0.50 (-1.36)	0.61	-0.45 (-1.25)	0.64
Other Adult in the Family	0.26* (1.71)	1.30	0.34* (1.93)	1.40	0.26* (1.71)	1.30
Receives AFDC	-0.51* (-2.37)	0.60	-0.52* (-2.41)	0.59	-0.50* (-2.33)	0.60
Received AFDC in Previous Periods	0.63* (3.10)	1.87	0.63* (3.10)	1.88	0.63* (3.10)	1.87
Receives Food Stamps	1.04* (4.14)	2.84	1.04* (4.14)	2.83	1.04* (4.14)	2.82
Received Food Stamps in Previous Periods	-0.08 (-0.34)	0.93	-0.08 (-0.34)	0.92	-0.08 (-0.34)	0.93
Family Income as a Percent of Poverty	-0.29* (-3.30)	0.75	-0.29* (-3.30)	0.75	-0.29* (-3.30)	0.75
Personal Earnings (x 1,000)	-0.76* (-3.45)	0.47	-0.73* (-3.29)	0.48	-0.77* (-3.50)	0.46
Personal Income (x 1,000)	0.38* (1.80)	1.47	0.35 (1.64)	1.42	0.39* (1.85)	1.47
State Fixed Effects	Y		Y		Y	

Exhibit 5.13 (continued)
Hazard Model Estimates for Young Women: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables						
GA Cuts Per Capita	0.04 (0.80)	1.04	0.04 (0.78)	1.04	0.06 (1.18)	1.06
Lag of GA Cuts Per Capita	-0.02 (-0.41)	0.98	-0.02 (-0.39)	0.98	-0.03 (-0.59)	0.97
SSI Benefit Amount	0.01 (0.71)	1.01	0.01 (0.67)	1.01	0.01 (0.67)	1.01
Maximum Monthly AFDC Benefit	0.01 (1.00)	1.01	0.01 (0.91)	1.01	0.01 (0.91)	1.01
Average Tax and Benefit Reduction Rate	-1.57 (-0.71)	0.21	-1.10 (-0.45)	0.33	-0.15 (-0.06)	0.86
Unemployment Rate	0.05 (0.42)	1.05	0.01 (0.08)	1.01	-0.06 (-0.48)	0.94
Lag of Unemployment Rate	0.06 (0.53)	1.07	0.05 (0.42)	1.05	0.07 (0.58)	1.08
Second Lag of Unemployment Rate	0.10 (1.06)	1.10	0.05 (0.50)	1.05	0.09 (0.87)	1.10
California Welfare Reform (94,95,96)	0.68 (0.94)	1.97	0.46 (0.57)	1.59	0.69 (0.92)	1.99
Massachusetts Welfare Reform (95,96)	0.96 (1.33)	2.60	-0.34 (-0.25)	0.71	0.90 (1.23)	2.45
Michigan Welfare Reform (95,96)	1.87* (2.27)	6.52	1.31* (1.20)	3.72	1.65 (2.01)	5.19
Wisconsin Welfare Reform (94,95,96)	-0.03 (-0.03)	0.97	-0.71 (-0.52)	0.49	-0.04 (-0.04)	0.96
Year Interactions						
Probability of AFDC Receipt * 1991	N/A	N/A	2.34 (1.14)	10.38	N/A	N/A
Probability of AFDC Receipt * 1992	N/A	N/A	1.67 (0.77)	5.33	N/A	N/A
Probability of AFDC Receipt * 1993	N/A	N/A	1.35 (0.63)	3.86	N/A	N/A
Probability of AFDC Receipt * 1994	N/A	N/A	1.98 (0.95)	7.21	N/A	N/A
Probability of AFDC Receipt * 1995	N/A	N/A	0.96 (0.44)	2.61	N/A	N/A
Probability of AFDC Receipt * 1996	N/A	N/A	-1.60 (-0.65)	0.20	N/A	N/A
Children in Family * 1991	N/A	N/A	N/A	N/A	1.19* (2.32)	3.28
Children in Family * 1992	N/A	N/A	N/A	N/A	1.31* (2.45)	3.71

Exhibit 5.13 (continued)
Hazard Model Estimates for Young Women: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Year Interactions (continued)						
Children in Family * 1993	N/A	N/A	N/A	N/A	0.90 (1.67)	2.46
Children in Family * 1994	N/A	N/A	N/A	N/A	1.20* (2.26)	3.31
Children in Family * 1995	N/A	N/A	N/A	N/A	1.35* (2.48)	3.87
Children in Family * 1996	N/A	N/A	N/A	N/A	1.01 (1.71)	2.75
N	133,414	N/A	133,414	N/A	133,414	N/A
Allowances	313	N/A	313	N/A	313	N/A
Log Likelihood	-1,811.36	N/A	-1,807.33	N/A	-1,805.90	N/A
Likelihood Ratio Test Statistic[233] (vs. Model 1)	N/A		8.06		10.92	
Degrees of Freedom	N/A		6		6	

Duration and Panel Effects

As in the application models, we find no statistically significant shifts of the allowance hazard rate with duration or across SIPP panels. The pattern of duration coefficients suggests an initial increase in the allowance hazard with duration through the fourth year, then a decline. This may reflect time, rather than duration effects, but it is not possible to tell.

Respondent Characteristics Observed in the First SIPP Interview

Most of the allowance coefficients for the characteristics observed at the first SIPP interview are quite similar to the corresponding coefficients from the application model, and almost all are significant at the ten percent level or greater. There are three important exceptions. First, comparison of the coefficients for the disability and health variables in the two equations shows that severe disability and poor health both increase the estimated probability of an allowance. The odds of a first allowance for a person with a severe disability are 4.3 times greater than those for a person without a severe disability, holding other things constant. By comparison, the odds of a person with a disability applying are just 2.5 times greater than the odds of a person without a severe disability applying. Similarly, the combined odds of an allowance for a person who reported a severe disability and poor health are 44 times those for a person who reports no disability and is in very good or excellent health.[234] The corresponding figure for applications is 15. Thus, it appears that those applicants who have severe disabilities and poor health, according

[233] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

[234] The combined odds were calculated exponentiating the sum of the coefficients from each of these variables (1.46 + 0.88 +1.45).

to SIPP, are more likely to receive an allowance consistent with the design of SSI. This also provides an indication that severity of disability and poor health as measured in SIPP are substantially correlated with the severity standards used by SSA in making disability determinations.

Second, current receipt of AFDC benefits reduces the allowance hazard, holding past receipt (and other factors) constant, whereas past receipt of AFDC benefits, in the absence of current receipt, has about the same effect on odds of an allowance as on applications. This result might be explained in a number of different ways, but it is hard to draw any conclusion.[235]

Third, comparison of the family income and personal earnings coefficients in the application and allowance models suggests that both of these variables have a greater impact on the odds of an application than on the odds of an allowance, which is not very surprising. What is perhaps more surprising is that the personal income coefficients imply that personal income increases the odds of an allowance, holding family income and personal earnings constant.[236]

Effects of State-level Factors

Similar to the applicant models, we find that the state fixed effects are generally larger in the southern states.[237] We also find that the pattern of estimates is similar across the applicant and allowance models, though there are some exceptions.[238] The range of estimates is approximately twice as large in the allowance models as in the application models. Similar to the application models, the coefficient estimates indicate a regional component to allowances for young women; however, because of the limited sample sizes of allowances it is difficult to capture any statistically significant effects.

As in the application models, the state-level variables for economic and program factors almost all have very small and statistically insignificant coefficients. The coefficient on the average tax and benefit reduction rate for AFDC families is very large, again, and the very small t-statistic suggests high multicollinearity between this variable and the duration and panel dummies.

Given the insignificant coefficients on each of the four state welfare reform dummies in the application equation, we were surprised to find a positive and statistically significant coefficient on the Michigan welfare reform dummy in the allowance equation. This result by itself suggests that welfare reform in Michigan had a positive effect on SSI allowances in Michigan, but the fact that we found no discernable effect on applications makes this interpretation problematic. Correction of the error in the GA data for Michigan might substantially change this coefficient.

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[235] For instance, lack of current support might make the applicant who is a past, but not current, AFDC recipient more intent on obtaining SSI benefits than the applicant who is a current AFDC recipient. Alternatively, adjudicators may be more "hard nosed" toward applicants who have AFDC support, or may erroneously count the applicant's share of family AFDC support as income in conducting the SSI means test (perhaps because the applicant fails to identify the AFDC income as AFDC income). There are many other possibilities

[236] It may be that unearned personal income includes other disability benefits (including workers' compensation and DI) in many cases. If so, the personal income variable may reflect evidence of disability that is not otherwise controlled for in the model, at least after controlling for personal earnings, but this is speculation.

[237] We do not report the individual state fixed effects.

[238] Certain states, such as California and New York, had large negative estimates in the allowance model, but relatively small estimates in applicant model.

Time Interactions

We find that the allowance model coefficients of the interactions between the AFDC participation probability and the year dummies for 1991 to 1995 (Model 2) are all larger than the corresponding coefficients in the application equations -- in some cases substantially so -- but also statistically insignificant. As in the application equation, the coefficient for the 1996 interaction is negative and insignificant. We were also unable to reject the null hypothesis that all the coefficients of these interactions are zero. The pattern of coefficients suggests that allowance rates for high probability AFDC cases increased relative to those for low probability cases early in the period, but that this increase was not sustained through the end of the period.

The coefficients of the interactions between the dummy for children in family and the dummies for 1991 through 1996 (Model 3) are all positive, and four of the five are statistically significant. The corresponding hazard ratios are on the order of 3.0 for each year – i.e., there appears to have been a three-fold increase in the allowance hazard for women with children relative to the hazard for women without children after 1990. All of these coefficients are larger than the corresponding coefficients from the application equation, indicating a positive shift in allowance rates for young women with own children relative to those for young women without own children after 1990.

2. Young Men

Applications

We used data for approximately 33,062 SIPP respondents in estimating the applicant models for young men (***Exhibit 5.14***), of whom 440 applied for SSI after they were first observed in SIPP and before August 1996. The number of person-year observations is 120,214.

We estimated the same three models as for young women, but found that the coefficients of the interactions between AFDC participation probabilities with year dummies for 1991 through 1996 in Model 2 had extraordinarily high standard errors. This was due to very low variation in the AFDC participation probabilities themselves, which in turn reflected the very small share of men in the sample who participated in AFDC when they were observed in SIPP, and the inability of the AFDC participation model to predict high probability cases (see ***Appendix Exhibit E.11***).[239] Hence, we only report the results for Models 1 and 3 here.

Some of the findings for young men are similar to those for young women, but there are some striking differences. The latter may be substantially due to the relatively high AFDC participation rate for young women. We focus on the differences in the following discussion.

[239] No predicted AFDC participation probability for the young men in the sample exceeds 10 percent, compared to a maximum of 56 percent for young women.

Exhibit 5.14
Hazard Model Estimates for Young Men: First Applications.[240]

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables				
Duration Hazards				
Period 1	-8.72	0.56	-7.83	0.55
Period 2	-8.42	0.76	-7.55	0.73
Period 3	-8.44	0.75	-7.60	0.70
Period 4	-8.57	0.65	-7.72	0.62
Period 5	-8.42	0.76	-7.57	0.72
Period 6	-8.38	0.80	-7.55	0.74
Period 7	-8.15	0.00	-7.24	0.00
1990 SIPP panel member	-0.03 (-0.09)	0.97	-0.01 (-0.03)	0.99
1991 SIPP panel member	0.00 (0.00)	1.00	0.02 (0.08)	1.02
1992 SIPP panel member	0.00 (0.00)	1.00	0.01 (0.05)	1.01
SIPP Variables				
Age as of January 1993	0.02* (2.22)	1.02	0.02* (2.22)	1.02
Hispanic	0.04 (0.26)	1.04	0.04 (0.26)	1.04
Black	0.36* (2.81)	1.43	0.36* (2.81)	1.43
No High School Diploma	0.86* (3.26)	2.36	0.86* (3.26)	2.36
High School Diploma Only	0.82* (3.17)	2.27	0.82* (3.17)	2.27
Some College	0.68* (2.48)	1.97	0.68* (2.48)	1.97
Student	-0.50* (-2.82)	0.60	-0.50* (-2.82)	0.60
Has a Severe Disability	1.02* (6.18)	2.78	1.02* (6.18)	2.78
Has a Disability	0.95* (5.40)	2.59	0.95* (5.40)	2.58
Missing Information on Disability	1.08* (7.71)	2.94	1.08* (7.71)	2.94
Reports to be in Good Health	0.61* (4.49)	1.83	0.61* (4.49)	1.83

[240] For more information on the variables, see ***Exhibit 5.10***. Values in parentheses are t-statistics. An asterisk (*) indicates significance at the 10 percent level or better, using a two-tailed test.

Exhibit 5.14 (continued)
Hazard Model Estimates for Young Men: First Applications

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)				
Reports to be in Fair Health	0.76* (3.98)	2.14	0.76* (3.96)	2.15
Reports to be in Poor Health	1.02* (4.13)	2.76	1.02* (4.13)	2.76
Married	-0.36* (-1.90)	0.70	-0.36* (-1.90)	0.70
Divorced/Widow	0.40* (2.68)	1.49	0.40* (2.68)	1.49
Children in Family	-0.05 (-0.28)	0.95	-0.54 (-0.97)	0.58
Age of Youngest Child	-0.82* (-1.73)	0.44	-0.85* (-1.79)	0.43
Other Adult in the Family	0.01 (0.07)	1.01	0.01 (0.07)	1.01
Receives AFDC	19.82 (0.00)	--	19.81 (0.00)	--
Received AFDC in Previous Periods	-20.19 (0.00)	--	-20.18 (0.00)	--
Receives Food Stamps	0.13 (0.62)	1.14	0.13 (0.62)	1.14
Received Food Stamps in Previous Periods	0.34* (2.10)	1.41	0.34* (2.10)	1.40
Family Income as a Percent of Poverty	-0.02 (-0.32)	0.98	-0.02 (-0.32)	0.98
Personal Earnings (x 1,000)	0.15 (0.89)	1.16	0.15 (0.89)	1.16
Personal Income (x 1,000)	-0.67* (-3.64)	0.51	-0.66* (-3.59)	0.51
State Fixed Effects	Y		Y	
GA Cuts Per Capita	-0.04 (-1.14)	0.96	-0.03 (-0.83)	0.97
Lag of GA Cuts Per Capita	0.07* (2.19)	1.07	0.06* (1.82)	1.07
SSI Benefit Amount	0.01 (1.00)	1.01	0.01 (0.91)	1.01
Maximum Monthly AFDC Benefit	-0.01 (-1.25)	0.99	-0.01 (-1.25)	0.99
Average Tax and Benefit Reduction Rate	3.00 (1.58)	20.01	3.36* (1.70)	28.74

Exhibit 5.14 (continued)
Hazard Model Estimates for Young Men: First Applications

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables				
Unemployment Rate	-0.01 (-0.10)	0.99	-0.02 (-0.20)	0.98
Lag of Unemployment Rate	0.05 (0.52)	1.06	0.04 (0.41)	1.04
Second Lag of Unemployment Rate	0.07 (0.86)	1.07	0.05 (0.60)	1.05
California Welfare Reform (94,95,96)	-0.24 (-0.49)	0.78	-0.25 (-0.51)	0.78
Massachusetts Welfare Reform (95,96)	0.20 (0.25)	1.22	0.19 (0.23)	1.21
Michigan Welfare Reform (95,96)	-0.20 (-0.28)	0.82	-0.28 (-0.39)	0.76
Wisconsin Welfare Reform (94,95,96)	-0.39 (-0.66)	0.67	-0.42 (-0.71)	0.66
Year Interactions				
Children in Family * 1991	N/A	N/A	0.18 (0.29)	1.20
Children in Family * 1992	N/A	N/A	0.52 (0.88)	1.68
Children in Family * 1993	N/A	N/A	0.45 (0.78)	1.58
Children in Family * 1994	N/A	N/A	0.65 (1.13)	1.91
Children in Family * 1995	N/A	N/A	0.76 (1.31)	2.14
Children in Family * 1996	N/A	N/A	0.27 (0.44)	1.32
N	120,214	N/A	120,214	N/A
Applications	440	N/A	440	N/A
Log Likelihood	-2,635.18	N/A	-2,632.99	N/A
Likelihood Ratio Test Statistic[241] (vs. Model 1)	N/A		4.38	
Degrees of Freedom	N/A		6	

Duration and Panel Effects

As with women, we find no statistically significant evidence of a shift in the hazard rates with duration. While for women there appeared to be a trend toward higher hazard rates with duration, this is less evident for men. The coefficients of the 1990, 1991, and 1992 panel variables for men are all very close to zero, whereas the female coefficients were all negative and one (1992)

[241] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

was marginally significant. Thus, the slim evidence of lower hazard rates for the first three panels relative to the 1993 panel that was found for women is absent for men.

Respondent Characteristics Observed in the First SIPP Interview

Some of the coefficients for characteristics observed in the first SIPP interview are substantially different for men than women, although many are also quite similar. The latter include the coefficients for the education, disability, and health variables.

Findings for ethnicity and race are quite different for men and women. The Hispanic ethnicity coefficient is small and insignificant for men, but negative and significant for women, while the coefficient for the black race variable is positive and significant for men but small and insignificant for women. The point estimate implies the application odds ratio for black males is estimated to be 143 percent of that for non-black males, other things constant.

The coefficients of the variables that measure family status are also quite different for men and women. The coefficient of the dummy variable for married is negative and quite significant for men, while small and insignificant for women. The application odds ratio for a married man is estimated to be only 70 percent of that for a never married man, other things constant. The divorce/widowed coefficient for men is larger and more significant than the corresponding coefficient for women. The application odds ratio for a divorced/widowed man is estimated to be 149 percent of that for a never married man, other things constant. While children in family has a significant negative coefficient for women, its coefficient is small and insignificant for men.

There are also substantial differences in the coefficients of the program participation variables for young men and young women. First, both the current and past AFDC participation coefficients have enormous standard errors in the male equations, no doubt reflecting very high collinearity between these variables, which is due to very low AFDC participation rates for young men. The Food Stamp coefficients also seem quite different, but note that the sum of the coefficients on current and past Food Stamp participation, which is the estimate of the effect of current participation, is almost identical for men and women.

There are also differences in the income coefficients for young men and young women. Family income has a very small and insignificant coefficient for men, but is negative and quite significant for women. Findings for the personal income coefficients are nearly the opposite, however: a negative and significant coefficient for men, and a negative but insignificant coefficient for women.

Effects of State-level Factors

As with the model for young women, there is considerable variation in the estimated state fixed effects. We do not, however, find a regional pattern in our estimates of the state fixed effects.[242]

[242] We do not report the individual state fixed effects. We did not test the hypothesis that all state effects are zero. None were significantly different than for the omitted state, West Virginia, but in this model West Virginia's intercept happened to be close to the middle of the intercepts for all states.

With one exception, the coefficients of the state program and economic variables are all statistically insignificant, as they all were for women. The exception is the coefficient of the lagged value of the GA cut variable which is significant and positive. The fact that the lagged coefficient is positive and significant while the current one is not may reflect the miscoding of the GA variable for Michigan, mentioned previously. The lagged coefficient implies that the odds ratio for a respondent in a state that cuts its GA program by one participant per 10,000 population increases by seven percent in the year after the cut. Michigan reduced its GA caseload by over 15 participants per 10,000 population in 1991. Application of this coefficient to Michigan's cut implies an increase in the odds ratio of 185 percent.[243]

As with young women, all of the coefficients for the specific state welfare reform dummy variables are statistically insignificant. Positive differences between the female and male coefficients might also be indicative of an impact of welfare reform, because impacts are expected to be larger for women. Comparison of the values of the coefficients for men and women reveals no regular pattern.

Time Interactions

The coefficients of the interactions between the children in family dummy and the year dummies for 1991 to 1996 are all positive, although none are statistically significant individually. We also cannot reject the null hypothesis that all of the population coefficients for these interactions are zero at the five percent significance level, but we can reject it at the ten percent level – a somewhat stronger result than we obtained for women. The coefficients themselves are very similar to those for young women, and add strength to our earlier tentative conclusion that there was positive shift in the application hazard rate for parents during the period. The fact that the estimated coefficients are essentially the same for men and women suggests that this shift was driven by factors other than AFDC reforms, perhaps *Zebley* spillover effects, administrative changes in SSI, and various outreach efforts.

As with women, we also found that the coefficient of children in family, by itself, is smaller in Model 3 than in Model 1, although neither coefficient is statistically significant. The apparent reason, again, is that the coefficients in Model 1 represent seven-year averages of the annual coefficients for this variable, which are less negative after 1990 than in 1991.

Allowances

We used data for 33,062 SIPP respondents in estimating the allowance models for young men (***Exhibit 5.15***), of whom 235 received first SSI allowances after they were first observed in SIPP and before August 1996. There are 114,725 person-year observations.

As with women, many of the coefficients in the men's allowance models are similar to the corresponding coefficients in the men's application models. As before, we interpret identical coefficients for an explanatory variable in the two models as meaning that the variable is unrelated to the allowance rate, holding the other explanatory variables constant. The following discussion focuses on variables whose coefficients are substantially different for men in the two

[243] We have not tried to compare the magnitude of this estimated effect to the various estimates for Michigan presented in Chapter I because of the coding error.

models for men, and also compares implied effects on allowance rates for those obtained for women.

Duration and Panel Effects

The duration and panel effect findings are very similar to those for women. As in the application models, we find no statistically significant shifts of the allowance hazard rate with duration or across SIPP panels. The pattern of duration coefficients suggests an initial increase in the allowance hazard with duration through the fourth year, then a decline. In combination with the pattern of duration coefficients in the application equation, this suggests that allowance rates follow a similar pattern. This may reflect time, rather than duration effects, but it is not possible to tell.

Respondent Characteristics Observed in the First SIPP Interview

As in the results for young women, most of the allowance coefficients for the characteristics observed at the first SIPP interview are quite similar to the corresponding coefficients from the application model. The coefficients for the disability and health variables are again an important exception. Comparing the coefficients from the two equations shows that severe disability and poor health both increase the estimated probability of an allowance. The odds of a first allowance for a person with a severe disability are 3.8 times those for a person without a severe disability, holding other things constant. By comparison, the odds of applying for a person with a disability are just 2.8 times greater than the odds of applying for a person without a severe disability. Similarly, the odds of an allowance for a person who reports a severe disability and poor health are 42 times those for a person who reports no disability and is in very good or excellent health.[244] The corresponding figure for applications is 20.

For women, we found that current receipt of AFDC benefits reduces the allowance hazard, holding past receipt (and other factors) constant, whereas past receipt of AFDC benefits, in the absence of current receipt, has about the same effect on allowances as on benefits. We do not replicate this finding for men, but this is due to the relatively small number of cases in our sample and the collinearity between past and current receipt.

For women, we found that the coefficients of all of the family status variables were quite similar in the two equations. This is also true for men, with the exception of the coefficient for divorced/widowed. The coefficient is large and significant in the application equation, but small and insignificant in the allowance equation, implying that allowance rates for young male applicants who are divorced or widowed are lower than for those who were never married.

For women, we found that both family income and personal earnings are associated with lower allowance rates, while personal income is associated with higher allowance rates. We speculated that the latter might be because unearned personal income includes other disability benefits (including workers' compensation and DI), in many cases. For men, the coefficients of all three of these variables are quite similar in the two equations. We do not have an explanation for the apparent differences in the effects of these variables on allowance rates for young women and young men.

[244] The relative odds were calculated by exponentiating the sum of the coefficients from the severe disability, any disability, and poor health variables.

Exhibit 5.15
Hazard Model Estimates for Young Men: First Allowances.[245]

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables				
Duration Hazards				
Period 1	-17.92	0.93	-13.03	1.05
Period 2	-17.64	1.24	-12.78	1.35
Period 3	-17.59	1.30	-12.78	1.35
Period 4	-17.69	1.17	-12.95	1.13
Period 5	-17.32	1.70	-12.58	1.65
Period 6	-17.32	1.70	-12.70	1.47
Period 7	-17.85	0.00	-13.08	0.00
1990 SIPP panel member	0.15 (0.34)	1.17	0.30 (0.72)	1.35
1991 SIPP panel member	0.00 (0.00)	1.00	0.12 (0.35)	1.12
1992 SIPP panel member	0.06 (0.22)	1.06	0.14 (0.53)	1.15
SIPP Variables				
Age as of January 1993	0.05* (4.17)	1.05	0.05* (4.17)	1.05
Hispanic	0.17 (0.86)	1.19	0.16 (0.81)	1.17
Black	0.31* (1.68)	1.36	0.29 (1.58)	1.34
No High School Diploma	0.87* (2.40)	2.40	0.88* (2.43)	2.41
High School Diploma Only	0.66* (1.83)	1.94	0.67* (1.86)	1.96
Some College	0.74* (1.97)	2.10	0.75* (2.00)	2.11
Student	-0.34 (-1.45)	0.71	-0.34 (-1.45)	0.71
Has a Severe Disability	1.34* (6.44)	3.83	1.35* (6.49)	3.85
Has a Disability	0.92* (3.83)	2.50	0.92* (3.83)	2.51
Missing Information on Disability	1.15* (5.50)	3.16	1.15* (5.50)	3.16
Reports to be in Good Health	0.83* (4.21)	2.30	0.83* (4.21)	2.29
Reports to be in Fair Health	1.21* (4.90)	3.36	1.21* (4.88)	3.35
Reports to be in Poor Health	1.47* (4.71)	4.35	1.46* (4.68)	4.31

[245] For more information on the variables, see ***Exhibit 5.10***. Values in parentheses are t-statistics. An asterisk (*) indicates significance at the 10 percent level or better, using a two-tailed test.

Exhibit 5.15 (continued)
Hazard Model Estimates for Young Men: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)				
Married	-0.44* (-1.68)	0.65	-0.44* (-1.67)	0.65
Divorced/Widow	0.17 (0.85)	1.19	0.18 (0.90)	1.20
Children in Family	-0.31 (-1.21)	0.74	0.11 (0.21)	1.12
Age of Youngest Child	-0.41 (-0.55)	0.66	-0.39 (-0.52)	0.68
Other Adult in the Family	-0.09 (-0.47)	0.91	-0.08 (-0.42)	0.92
Receives AFDC	21.45 (0.00)	-----	21.39 (0.00)	-----
Received AFDC in Previous Periods	-21.22 (0.00)	0.00	-21.19 (0.00)	0.00
Receives Food Stamps	0.50* (1.88)	1.64	0.51* (1.92)	1.67
Received Food Stamps in Previous Periods	0.52* (2.35)	1.68	0.52* (2.35)	1.68
Family Income as a Percent of Poverty	0.01 (0.11)	1.01	0.01 (0.11)	1.01
Personal Earnings (x 1,000)	0.00 (0.00)	1.00	-0.01 (-0.04)	0.99
Personal Income (x 1,000)	-0.71* (-2.80)	0.49	-0.70* (-2.77)	0.50
State Fixed Effects	Y		Y	
State Program and Economic Variables				
GA Cuts Per Capita	-0.06 (-1.20)	0.94	-0.07 (-1.37)	0.94
Lag of GA Cuts Per Capita	0.03 (0.71)	1.03	0.02 (0.47)	1.02
SSI Benefit Amount	0.02 (1.33)	1.02	0.00 (0.00)	1.00
Maximum Monthly AFDC Benefit	-0.01 (-0.91)	0.99	0.00 (0.00)	1.00
Average Tax and Benefit Reduction Rate	4.02 (1.57)	55.66	3.13 (1.22)	22.96
Unemployment Rate	0.13 (1.02)	1.14	0.22* (1.75)	1.24

Exhibit 5.15 (continued)
Hazard Model Estimates for Young Men: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 3:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables (continued)				
Lag of Unemployment Rate	-0.09 (-0.70)	0.91	-0.11 (-0.85)	0.89
Second Lag of Unemployment Rate	0.11 (1.02)	1.12	0.10 (0.92)	1.10
California Welfare Reform (94,95,96)	0.86 (1.15)	2.37	-0.09 (-0.17)	0.92
Massachusetts Welfare Reform (95,96)	1.05 (1.22)	2.85	1.18 (1.37)	3.26
Michigan Welfare Reform (95,96)	-20.72 (0.00)	0.00	-20.76 (0.00)	0.00
Wisconsin Welfare Reform (94,95,96)	0.47 (0.33)	1.59	0.23 (0.16)	1.26
Year Interactions				
Children in Family * 1991	N/A	N/A	-0.87 (-1.35)	0.42
Children in Family * 1992	N/A	N/A	-1.31* (-1.96)	0.27
Children in Family * 1993	N/A	N/A	-0.29 (-0.52)	0.75
Children in Family * 1994	N/A	N/A	-0.41 (-0.71)	0.66
Children in Family * 1995	N/A	N/A	0.22 (0.39)	1.25
Children in Family * 1996	N/A	N/A	-0.71 (-1.02)	0.49
N	114,725	N/A	114,725	N/A
Allowances	235	N/A	235	N/A
Log Likelihood	-1,420.158	N/A	-1,414.15	N/A
Likelihood Ratio Test Statistic[246] (vs. Model 1)	N/A		12.02	
Degrees of Freedom	N/A		6	

Effects of State-Level Factors

We find the same general pattern of estimates in the state fixed effects as for the allowance model as in the applicant models, though there are some exceptions.[247] In general, we find that the range of coefficients is very similar to that in the application model for men.[248]

[246] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

As with women, we find that the coefficients of the state-level economic and program factors are all insignificant in the allowance equation. This includes the coefficient of the first lag of the GA cut variable, which was the only significant coefficient in the application equation for young men. While the smaller coefficient of this variable in the allowance equation implies a negative effect on the allowance rate, the difference between the coefficients in the two equations is not statistically significant.[249]

Time Interactions

The comparison of the coefficients of interactions between the children in family dummy and the year dummies for 1991 to 1996 in the application and allowance equations for young men is quite different than the comparison for young women – despite the fact that the coefficients of the interactions in the application equations are quite similar for young men and young women. For young women, we found positive, sometimes significant coefficients in the allowance equations, and an implied upward shift in the allowance rate for women living with own children relative to other young women during the period.

For men, we find mostly negative, insignificant coefficients in the allowance rate equation, but a significant negative coefficient for the 1992 interaction and a positive but insignificant coefficient for the 1995 interaction. The apparent upward shift in the application hazards for both young women and young men living with their own children relative to other young women and young men were apparently accompanied by an upward shift in the allowance rate for young women living with their own children but a downward shift in the allowance rate for young men living with their own children. We do not have an explanation for this finding.

C. Specifications for Children

There are several similarities between the child and adult specifications. We also use the discrete time logit model to estimate SSI application and allowance hazard rates. The sample for the application models consists of all SIPP children who had never filed an application prior to their first SIPP interview and, for the allowance models, children who never received SSI prior to their first interview. A small number of children who lived in certain states were excluded for the same reasons as described above for adults.[250] The dependent variables are constructed in a fashion identical to those in the adult models.

The one major difference is in the set of explanatory variables used for the child estimates. While we continue to use all of the same duration, panel, and state variables as in the adult models, our

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[247] We do not report the individual state fixed effects. Certain states that have positive coefficients in the applicant model, such as California, have large negative coefficients in the allowance models. We found a similar type of variation in coefficient estimates for California in the models for women.

[248] The overall range is larger in the applicants model, but if the top and bottom outliers are excluded from both models, the range of coefficients is very similar.

[249] The Michigan welfare reform dummy has an enormous standard error. This likely reflects a very small number of allowances to young male SIPP respondents from Michigan in this period.

[250] For both the application and allowance models, children living in the nine grouped states were excluded (Maine, Vermont, Iowa, North Dakota, South Dakota, Alaska, Idaho, Montana, and Wyoming). In addition, children from West Virginia were excluded from the application models and children from West Virginia, Hawaii, New Mexico, and Utah were excluded from the allowance models.

set of SIPP variables is slightly different. We first include the following individual/family variables: sex, age, child disability status, family type, AFDC participation, Food Stamp participation, family income as a percent of poverty, and other children in family.[251] With the exception of sex, family type, and the "other children in family" variable, all of these variables appeared in the adult specifications. We also include a number of characteristics of the child's mother and/or father. These variables include the following characteristics of both the mother and father: age, race, education, and disability status (see ***Exhibit 5.16***.).[252]

Exhibit 5.16
Description of SIPP Variables for Child Application and Allowance Models

Individual Variables	**Description**
Female	A dummy variable equal to one if the child is female, zero otherwise.
Age	Age is adjusted in every panel to reflect the child's age as of January 1990.
Disability Status: Child has a disability	A dummy variable equal to one if the child is reported to have a disability, zero otherwise.[253]
Child disability information missing	A dummy variable equal to one if the child is missing information on disability, zero otherwise.
Family Type: Child Lives with Mother Only	A dummy variable equal to one if the child lives with only his or her mother, zero otherwise.
Child Lives with Both Parents	A dummy variable equal to one if the child lives with his or her mother and father, zero otherwise.
AFDC Participation	A dummy variable equal to one if the child is from a family that receives AFDC benefits, zero otherwise.
Food Stamp Participation	A dummy variable equal to one if the child is from a family that receives Food Stamps, zero otherwise.
Family Income as a percent of poverty	Equal to the family's January income of the panel year as a percent of poverty.
Other Children in the Family	A dummy variable equal to one if there is another child in the family, zero otherwise.
Parent Variables	**Description**
Mother's/Father's Age	Age is adjusted in every panel to reflect the respective parent's age as of January 1990. The respective variable is defined as zero for children living in a family without their mother or father.
Parent's Race/Ethnicity: Mother/ Father is Hispanic	A dummy variable equal to one for a child whose mother/ father reports Hispanic ethnicity, zero otherwise.
Mother/ Father is Black	A dummy variable equaling one for a child whose mother/father is black (non-Hispanic), zero otherwise. (The omitted category is white)

[251] We include dummy variables for mother-only and two parent families (the excluded category is father only families). The other children in the family variable equals one if there is another child under age 18 in the family unit, and zero otherwise.

[252] In cases where there is an absent parent, the absent parent's information is assigned a value of zero.

[253] There are two definitions of disabilities used based on the age of the child. For those under age six, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the usual kind of activities by most children their age. For those age six and over, disability is defined as a child (as reported in the SIPP by the parent) that had a physical, learning, or mental heath condition that limits him/her in the ability to do regular school work.

Exhibit 5.16 (continued)
Description of SIPP Variables for Child Application and Allowance Models

Parent Variables	Description
Parent's Education:	
Mother/Father has no high school diploma	A dummy variable equaling one for a child whose mother/father is an individual with no high school diploma, zero otherwise.
Mother/Father has high school diploma only	A dummy variable equaling one for a child whose mother/father is an individual with only a high school diploma, zero otherwise.
Mother/Father has some college education.	A dummy variable equaling one for an individual with some college education, zero otherwise.[254]
Parent's Disability Status:	
Mother/Father Has a Severe Disability	A dummy variable equaling one for a child whose mother/father is severely disabled, zero otherwise.
Mother/Father Has a Disability	A dummy variable equaling one for a child whose mother/father is disabled, but not severely so, zero otherwise.[255]
Mother/Father disability information missing	A dummy variable equaling one for a child whose mother/father is missing disability information due to sample attrition, zero otherwise.[256]

We present estimates for two sets of application and allowance models. The first set includes duration and panel variables, SIPP variables, and state variables. The second set includes all of the same variables plus a set of year dummies that are interacted with an AFDC participation probability variable. Similar to the adult AFDC models, we estimate a linear probability model of AFDC participation to generate AFDC participation probabilities. The dependent variable in this model is equal to one if the child lives in a family that receives AFDC during the first SIPP interview, and zero otherwise. The explanatory variables are a subset of variables from the application and allowance models. The results from the linear probability model for children are presented in ***Appendix Exhibit E.12***.

D. Results from Child SSI Application and Allowance Models

1. Applications

We used data for 53,652 SIPP children in estimating the application models (***Exhibit 5.17***), of whom 1,103 applied for SSI after they were first observed in SIPP and before August 1996. There are 231,908 person-year observations. Our discussion focuses on the coefficients for the first of the two models estimated (Model 1), though most of the coefficients of these variables are stable across both models.

Duration and Panel Effects

Unlike adults, we find statistically significant shifts in the application hazard rate with duration for children. All of the duration hazards are negative and the magnitudes of coefficients

[254] The omitted education status category includes those who have received at least a college diploma.
[255] Includes individuals who report a limitation in kind or amount of work or housework they can do; has difficulty with any of the functional activities or ADLs; uses a wheelchair; has used a cane, crutches, or walker for more than six months; has a disabling mental or emotional condition.
[256] The omitted disability status category includes children whose mother/father reported that they had no disability.

gradually increase with each duration period, with the exception of the last period.[257] We also find that there were statistically significant shifts in the hazard rates for each of the panels, though the magnitude of the coefficients did not follow an increasing or decreasing pattern over time. Relative to the 1993 SIPP panel, the hazard rates are higher for the 1990 SIPP panel, but lower for the 1991 and 1992 SIPP panels.

The coefficients from the duration and panel hazards were likely influenced by the changes in policy for SSI children in the early nineties. Interpreting the individual duration and panel coefficients is difficult, however, because calendar years correspond to different durations for each SIPP panel member (e.g., calendar year 1991 represents the second duration in the 1990 panel and the first duration in the 1991 panel). To better understand the findings, we plot the intercepts for each panel by calendar year (see ***Exhibit 5.18***).[258] The plot shows a major parallel shift in the hazard from the 1990 to the 1991 panel, with no further shift thereafter. This is not surprising because children in the 1990 panel were "at-risk" for applying for SSI before the major changes took place in the child SSI reforms. Oversampling of the low-income population in the 1990 SIPP might also contribute to this shift. It is likely that this specification for children could be improved by including a separate set of duration terms for each panel.

Characteristics of Parents and Children Observed in the First SIPP Interview.

We have two sets of coefficients for our SIPP variables. The first is for individual/family level characteristics. The coefficients on the variables for female, age, family income as a percent of poverty, and lives with mother and father are negative and significant. The coefficients for any disability, missing disability information, other child in the family, present Food Stamp recipients, and lives with mother-only are positive and significant. We do not find a significant coefficient for the AFDC recipiency variable. We do find, however, that the coefficient for a mother-only family is very large. Hazard rates for children who lived in a mother-only family are 3.3 times those for children who lived with only their father and 4.5 times as large for those who lived with both parents.[259]

Somewhat surprisingly, the largest coefficient is for the presence of another child in the family. The odds ratio for children who lived with another child in the family were almost 17 times those for children who had no siblings living with them. This represents an increase in the overall probability of application from 0.5 percent to 8 percent, holding other factors constant at their means.

The coefficient of child disability is also large. The odds of applying for a child with a disability were 4.9 times those for a child without a disability. Similar to adults, it is interesting to note that the coefficient on the missing disability variable was also positive and significant, indicating

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[257] In statistical tests not shown in the exhibit, we find that there was a statistically significant shift in the hazard in each of the first four periods relative to the seventh period.

[258] The only panel that experienced a small drop-off in the hazard rate from one year to the next was the 1990 panel, in which the hazard fell from 1995 to 1996.

[259] The odds ratio comparison between mother-only and two parent families was calculated by taking the exponentiated difference between the coefficients between the mother-only and both parents variable.

that attrition from SIPP is greater for child SSI applicants than non-applicants, holding other factors constant.[260]

Our second set of coefficients is for characteristics of the child's parents. We find that several of the coefficients on the mother and father variables are statistically significant. In general, all of the parent's coefficients have the expected sign and are relatively small. For the mother's characteristics, we find positive and statistically significant coefficients on the variables for black, no high school diploma, and severe disability. We find a negative and statistically significant coefficient for age. For the father's characteristics, we find positive and statistically significant coefficients on the variables for age, black, and each level of schooling below college completion.

Effects of State-Level Factors

Similar to our findings for women, we find that odds of applying are generally higher in states in southern regions relative to those in other regions. [261] Of the 15 states with the highest fixed effects, 13 are southern. The odds of applying were highest in Kentucky and Mississippi, other things constant. This provides some evidence that some of the outreach efforts in states that effected children during the pre-reform period may have also had an impact on women.

Unlike the adult models, we find that several of the state program and economic variables are statistically significant. One reason for this result is that our sample of child applicants is much larger (1,103 child applicants vs. 545 young women applicants). The sign of this coefficient is difficult to explain. We also find a positive and statistically significant effect for ATBRR, the lag of the unemployment rate, and the second lag of the unemployment rate. Similar to the adult models, we find that the coefficient on ATBRR is quite large. Again, we suspect that the large coefficient reflects high collinearity with the duration and panel dummies. Further, because the timing of the major federal changes in SSI child policy coincided with large changes in the ATBRR, we suspect that the ATBRR variable is capturing some of this variation. To a lesser extent, the timing of the SSI policy changes may also influence the coefficient estimates for the lag of GA enrollment, lag of the unemployment rate, and second lag of the unemployment rates, though there is considerably more cross-state variation in changes in these variables.[262]

Similar to our adult application models, none of the coefficients for the specific state welfare reform dummy variables is significant, and all four are negative. While the sample sizes are larger for the child estimates, the individual sample samples for states in these time periods is likely still too small to capture any policy effects.

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[260] This finding has important implications for use of the Survey and Program Dynamics for studying transitions to SSI. We return to this in the next chapter.

[261] We do not report the individual state fixed effects. The omitted states is West Virginia.

[262] The error in the GA variable for Michigan might affect this coefficient, but most GA recipients are adults without children, so we would not expect to find a GA effect.

Time Interactions

In Model 2 (***Exhibit 5.17***), we include the AFDC participation probability interacted with six-year dummies for 1991 to 1996. We find that the interactions for 1992 through 1995 had positive coefficients, whereas the 1991 and 1996 interactions had negative coefficients. Based on log-likelihood ratio tests, we conclude that the set of coefficients is significant. Individually, all of the coefficients are statistically insignificant at the 5 percent level and only the 1994 interaction variable is significant at the 10 percent level. These coefficients provide evidence of a positive shift in the application odds for AFDC children relative to other children in low income families after 1991, but by 1996 the application odds for AFDC children relative to other children in low income families was below its 1990 level. The relative increase in the middle period could be a consequence of *Zebley*, but the decline at the end is more difficult to explain.

We find that the patterns of the AFDC participation probability interaction terms are similar to the patterns found in the application models for young adult women. The coefficients gradually increase in each year through 1994, and then decline through 1996. At its peak in 1994, the odds-ratio is 3.3. This implies that the application odds ratio of a child with an AFDC probability of 1.0 was 3.3 times larger in 1994 than in 1990, holding other factors constant. Thus, we observe a substantial shift in the hazard for high probability AFDC children relative to low probability AFDC children in the years following the *Zebley* decision.

The inclusion of the interaction terms has a small effect on the estimated coefficients for the duration and panel variables. In general, the magnitude of all of the duration variables becomes more negative and the duration for the fifth period becomes significant. In contrast, the estimated coefficients on the panel variables become more positive and all of the coefficients remain significant. It appears to be important to include annual variables in the child models to capture the effects of the changes in the child SSI program in the early nineties.

2. Allowances

We use data for 53,652 SIPP children from low-income families in estimating the allowance models (***Exhibit 5.19***), of whom 510 received their first SSI allowance after they were first observed in SIPP and before August 1996. There are 227,949 person-year observations for the analysis.

As in our adult models, many of the coefficients in the child allowance models are similar to their corresponding coefficients in the application models. Hence, the following discussion focuses on variables whose coefficients are different in the two models.

Exhibit 5.17
Hazard Model Estimates for Children: First Applications[263]

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables				
Duration Hazards				
Period 1	-16.93	0.24	-13.64	0.23
Period 2	-16.56	0.35	-13.32	0.31
Period 3	-16.34	0.44	-13.17	0.36
Period 4	-16.25	0.48	-13.06	0.41
Period 5	-15.86	0.71	-12.70	0.58
Period 6	-15.34	1.19	-12.21	0.95
Period 7	-15.51	0.00	-12.16	0.00
1990 SIPP panel member	1.15* (5.23)	3.17	1.25* (4.81)	3.48
1991 SIPP panel member	-0.45* (-2.65)	0.64	-0.36* (-1.89)	0.69
1992 SIPP panel member	-0.29* (-2.64)	0.75	-0.24* (-2.00)	0.78
SIPP Variables				
Female	-0.47* (-7.83)	0.63	-0.47* (-7.83)	0.63
Age as of January 1993	-0.02* (-2.23)	0.98	-0.01 (-1.45)	0.99
Receives AFDC	0.07 (0.78)	1.07	0.07 (0.78)	1.07
Receives Food Stamps	0.40* (4.44)	1.50	0.40* (4.44)	1.50
Family Income as a Percent of Poverty	-0.22* (-4.40)	0.80	-0.22* (-4.40)	0.80
Other Child in the Family	2.82* (25.64)	16.82	2.84* (25.82)	17.17
Has a Disability	1.59* (19.88)	4.92	1.58* (19.75)	4.87
Missing Information on Disability	0.30* (2.31)	1.34	0.30* (2.31)	1.35
Father's Age	0.01* (2.08)	1.01	0.01* (2.06)	1.01
Father is Black	0.38* (2.71)	1.46	0.45* (2.81)	1.57
Father is Hispanic	0.00 (0.01)	1.00	0.14 (0.64)	1.15
Father has No High School Diploma	0.56* (2.67)	1.74	0.58* (2.76)	1.78
Father has High School Diploma Only	0.49* (2.45)	1.63	0.51* (2.55)	1.66

[263] For more information on the variables, see ***Exhibit 5.16***. Values in parentheses are t-statistics. An asterisk (*) indicates significance at the 10 percent level or better, using a two-tailed test.

Exhibit 5.17 (continued)
Hazard Model Estimates for Children: First Applications

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)				
Father has Some College Education	0.19 (0.83)	1.21	0.21 (0.91)	1.23
Father has a Severe Disability	0.13 (0.93)	1.14	0.08 (0.53)	1.08
Father has a Disability	0.20 (1.05)	1.22	0.19 (1.00)	1.21
Father Disability Information Missing	-0.11 (-0.75)	0.89	-0.12 (-0.89)	0.89
Mother's Age	-0.01* (-1.00)	0.99	-0.01* (-1.00)	0.99
Mother is Black	0.34* (3.4)	1.41	0.23* (1.64)	1.26
Mother is Hispanic	0.09 (0.75)	1.10	-0.03 (-0.19)	0.97
Mother has No High School Diploma	0.55* (2.75)	1.74	0.43* (1.87)	1.53
Mother has High School Diploma Only	0.29 (1.53)	1.33	0.24 (1.20)	1.27
Mother has Some College Education	0.23 (1.15)	1.26	0.21 (1.05)	1.23
Mother has a Severe Disability	0.50* (5.56)	1.65	0.44* (4.40)	1.56
Mother has a Disability	0.03 (0.28)	1.03	0.01 (0.07)	1.01
Mother Disability Information Missing	0.12 (0.80)	1.12	0.11 (0.73)	1.11
Lives with Mother Only	1.21* (2.28)	3.34	1.18* (2.23)	3.24
Lives with Mother and Father	-0.30 (-0.91)	0.74	-0.19 (-0.54)	0.83
State Fixed Effects	Y		Y	
State Program and Economic Variables				
Maximum Monthly AFDC Benefit	0.01 (1.00)	1.01	0.00 (0.00)	1.00
GA Cuts Per Capita	-0.01 (-0.33)	0.99	0.00 (0.00)	1.00
Lag of GA Cuts Per Capita	-0.05* (-2.50)	0.96	-0.04* (-2.00)	0.96
SSI Benefit Amount	0.00 (0.00)	1.00	0.00 (0.00)	1.00
Average Tax and Benefit Reduction Rate	3.72* (3.10)	41.12	3.64* (2.66)	38.13
Unemployment Rate	-0.01 (-0.17)	0.99	-0.01 (-0.14)	0.99
Lag of Unemployment Rate	0.14* (2.33)	1.15	0.08 (1.33)	1.08

Exhibit 5.17 (continued)
Hazard Model Estimates for Children: First Applications

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables (Continued)				
Second Lag of Unemployment Rate	0.19* (3.80)	1.21	0.12* (2.40)	1.12
California Welfare Reform (94,95,96)	-0.22 (-0.58)	0.80	-0.22 (-0.58)	0.80
Massachusetts Welfare Reform (95,96)	-18.91 (0.00)	0.00	-18.92 (0.00)	0.00
Michigan Welfare Reform (95,96)	-0.01 (-0.03)	0.99	-0.26 (-0.68)	0.77
Wisconsin Welfare Reform (94,95,96)	-0.07 (-0.14)	0.93	-0.20 (-0.40)	0.82
Alternative Specifications				
Probability of AFDC Receipt * 1991	N/A	N/A	-0.07 (-0.10)	0.93
Probability of AFDC Receipt * 1992	N/A	N/A	0.66 (0.92)	1.94
Probability of AFDC Receipt * 1993	N/A	N/A	1.05 (1.46)	2.86
Probability of AFDC Receipt * 1994	N/A	N/A	1.20* (1.64)	3.33
Probability of AFDC Receipt * 1995	N/A	N/A	1.08 (1.46)	2.93
Probability of AFDC Receipt * 1996	N/A	N/A	-0.77 (-0.92)	0.46
N	231,908	N/A	231,908	N/A
Applications	1,103	N/A	1,103	N/A
Log Likelihood	-5,726.53	N/A	-5,713.67	N/A
Likelihood Ratio Test Statistic[264] (vs. Model 1)	N/A		25.72	
Degrees of Freedom	N/A		6	

[264] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

Exhibit 5.18
Child Application Panel Intercepts by Calendar Year Allowances

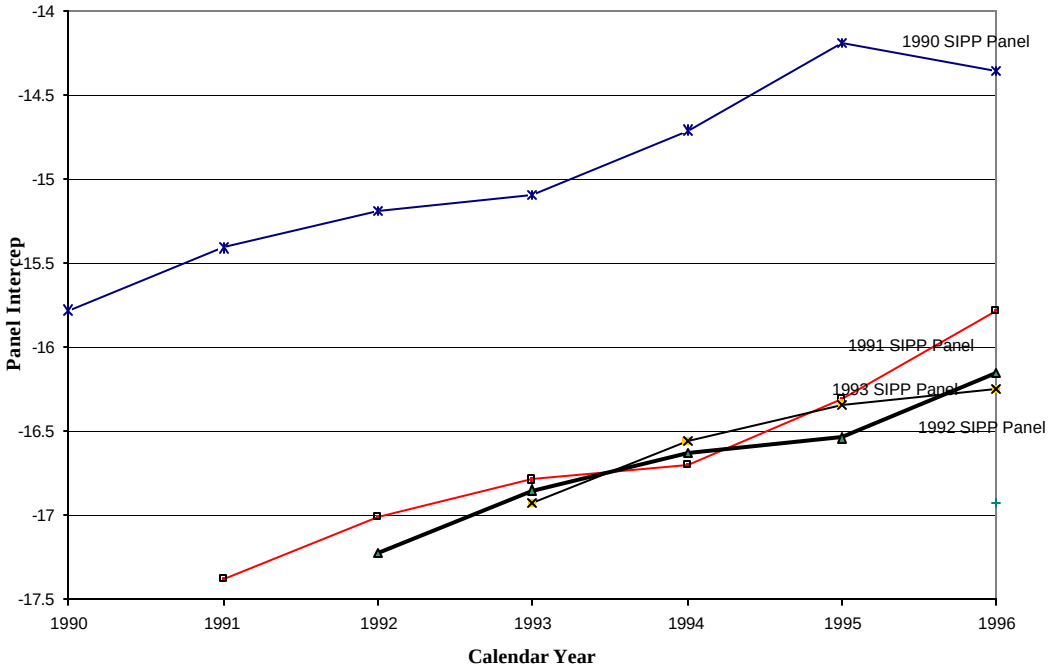


Exhibit 5.19
Hazard Model Estimates for Children: First Allowances[265]

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
Duration and Panel Variables				
Duration Hazards				
Period 1	-11.90	0.58	-8.06	0.66
Period 2	-11.73	0.69	-7.97	0.72
Period 3	-11.61	0.78	-7.95	0.73
Period 4	-11.72	0.70	-8.09	0.64
Period 5	-11.45	0.91	-7.84	0.82
Period 6	-10.88	1.62	-7.40	1.28
Period 7	-11.36	0.00	-7.64	0.00
1990 SIPP panel member	1.73* (5.97)	5.66	1.93* (5.68)	6.89
1991 SIPP panel member	0.02 (0.09)	1.02	0.16 (0.62)	1.18
1992 SIPP panel member	0.11 (0.65)	1.12	0.17 (0.94)	1.18
SIPP Variables				
Female	-0.38* (-3.80)	0.68	-0.39* (-3.90)	0.68
Age as of January 1993	-0.02* (-2.00)	0.98	-0.02 (-2.00)	0.98
Receives AFDC	0.32* (2.29)	1.38	0.32* (2.29)	1.38
Receives Food Stamps	0.10 (0.67)	1.10	0.10 (0.67)	1.10
Family Income as a Percent of Poverty	-0.19* (-2.71)	0.83	-0.19* (-2.71)	0.83
Other Child in the Family	2.84* (18.93)	17.04	2.85* (19.00)	17.25
Has a Disability	2.39* (21.73)	10.94	2.38* (21.64)	10.82
Missing Information on Disability	0.35* (1.75)	1.41	0.35* (1.75)	1.42
Father's Age	0.02* (2.00)	1.02	0.02* (2.00)	1.02
Father is Black	0.19 (0.86)	1.21	0.30 (1.30)	1.35
Father is Hispanic	0.01 (0.05)	1.01	0.21 (0.70)	1.23
Father has No High School Diploma	0.38 (1.15)	1.46	0.40 (1.21)	1.50
Father has High School Diploma Only	0.58* (1.87)	1.78	0.61* (1.97)	1.83
Father has Some College Education	0.71* (2.15)	2.04	0.73* (2.21)	2.08

[265] For more information see ***Exhibit 5.16***.

Exhibit 5.19 (continued)
Hazard Model Estimates for Children: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
SIPP Variables (continued)				
Father Disability Information Missing	0.40 (-1.25)	1.50	0.40 (-1.36)	1.49
Mother's Age	-0.01 (-1.61)	0.99	-0.01 (-1.57)	0.99
Mother is Black	0.44* (3.14)	1.55	0.28 (0.36)	1.33
Mother is Hispanic	0.38* (2.11)	1.47	0.22 (1.01)	1.24
Mother has No High School Diploma	1.05* (3.18)	2.87	0.88* (2.44)	2.40
Mother has High School Diploma Only	0.67* (2.03)	1.96	0.60* (1.82)	1.83
Mother has Some College Education	0.58* (1.76)	1.79	0.55 (1.62)	1.73
Mother has a Severe Disability	0.32* (2.46)	1.38	0.24* (1.71)	1.27
Mother has a Disability	0.13 (0.65)	1.14	0.10 (0.50)	1.10
Mother Disability Information Missing	-0.11 (-0.48)	0.90	-0.12 (-0.52)	0.89
Lives with Mother Only	0.63 (0.78)	1.88	0.59 (0.73)	1.81
Lives with Mother and Father	-0.89* (-1.68)	0.41	-0.72 (-1.33)	0.49
State Fixed Effects	Y	Y	Y	Y
State Program and Economic Variables				
Maximum Monthly AFDC Benefit	-0.00 (-0.11)	1.00	-0.00 (-0.11)	1.00
GA Cuts Per Capita	-0.01 (-0.25)	0.99	-0.00 (-0.10)	1.00
Lag of GA Cuts Per Capita	-0.05 (-1.67)	0.95	-0.05 (-1.66)	0.95
SSI Benefit Amount	-0.01 (-1.16)	0.99	-0.01 (-1.15)	0.99
Average Tax and Benefit Reduction Rate	5.38* (3.43)	217.17	4.84* (2.78)	126.98
Unemployment Rate	0.10 (1.11)	1.11	0.05 (0.51)	1.05
Lag of Unemployment Rate	-0.06 (-0.67)	0.94	-0.13 (-1.44)	0.87
Second Lag of Unemployment Rate	0.24* (3.00)	1.27	0.21* (2.63)	1.24
California Welfare Reform (94,95,96)	-0.91* (-1.78)	0.40	-0.95* (-1.86)	0.39

Exhibit 5.19 (continued)
Hazard Model Estimates for Children: First Allowances

Explanatory Variable	Model 1: Base Specification		Model 2:	
	Coefficient (T Ratio)	Odds Ratio	Coefficient (T Ratio)	Odds Ratio
State Program and Economic Variables (continued)				
Massachusetts Welfare Reform (95,96)	-18.07 (-0.00)	0.00	-18.13 (-0.00)	0.00
Michigan Welfare Reform (95,96)	0.25 (0.47)	1.28	-0.01 (-0.02)	0.99
Wisconsin Welfare Reform (94,95,96)	0.27 (0.43)	1.31	0.23 (0.36)	1.26
Alternative Specifications				
Probability of AFDC Receipt * 1991	N/A	N/A	0.47 (0.57)	1.60
Probability of AFDC Receipt * 1992	N/A	N/A	1.57* (1.78)	4.79
Probability of AFDC Receipt * 1993	N/A	N/A	1.59* (1.83)	4.89
Probability of AFDC Receipt * 1994	N/A	N/A	0.99 (1.09)	2.70
Probability of AFDC Receipt * 1995	N/A	N/A	1.20 (1.30)	3.33
Probability of AFDC Receipt * 1996	N/A	N/A	-0.71 (-0.62)	0.49
N	227,949	N/A	227,949	N/A
Allowances	510	N/A	510	N/A
Log Likelihood	-2,882.13	N/A	-2875.40	N/A
Likelihood Ratio Test Statistic[266] (vs. Model 1)	N/A		13.46	
Degrees of Freedom	N/A		6	

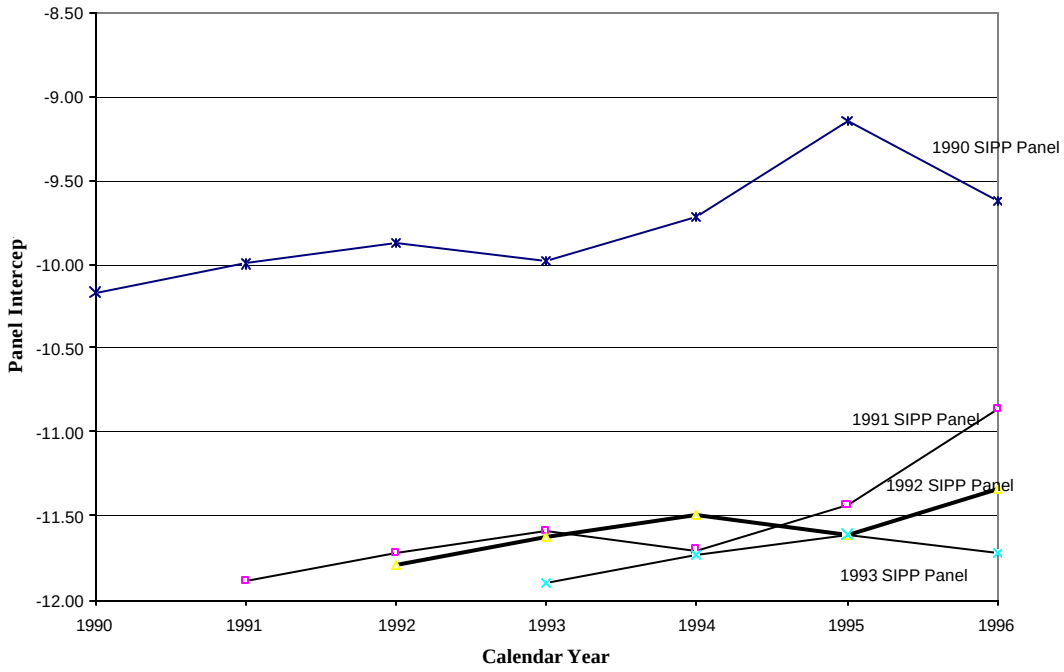
[266] The 5 percent critical value for this statistic, which has a chi-square distribution with six degrees of freedom if all the year interaction coefficients are zero for the population, is 12.6.

Duration and Panel Effects

Similar to the application models, we find that the hazard rate gradually increases with duration, with one small exception in the fourth year. There are, however, significant differences in the panel coefficients. In the allowance model, the only panel that showed a significant shift upward in the hazard rate relative to the 1993 panel is the 1990 panel. In comparison to the application model, the coefficients in the allowance model on the 1991 and 1992 panel variables switched signs and became insignificant.

These differences between the application and allowance model coefficients are somewhat misleading. When we plot the intercepts for each SIPP panel by year, they look quite similar to those for the application model (***Exhibit 5.20***). We find that the hazard rates for the 1990 SIPP panel were larger in each year than the hazard rates in the remaining SIPP panels. The main difference is that the slopes of the intercept lines for each panel are smaller in the allowance models than in the application models, indicating a decline in the allowance rate by year.

Exhibit 5.20
Child Allowance Panel Intercepts by Calendar Year



Characteristics of Parents and Children Observed in the First SIPP Interview.

While all of the coefficients on individual/family level characteristics have the same signs in both the application and allowance models, there are some differences in the magnitudes of the estimated coefficients. The biggest difference is in the estimated coefficient for disability. The odds of receiving an allowance for a child with a disability were 10.9 times greater than those of a child without a disability. By comparison, the odds of applying for a child with a disability were only 4.9 times that of a person with a disability. Thus, allowance rates are higher for those applicants identified as having a disability in SIPP. Another notable difference is in the estimated

coefficient for AFDC. In the allowance model, the coefficient is positive and significant, whereas it is positive and insignificant in the application model. The difference between the associated odds ratios though, is relatively small (1.38 for the allowance model vs. 1.07 in the application model).

Similar to the application models, the estimated coefficients in the allowance models on the parent variables are relatively small. The estimated coefficients for a few variables are only significant in the allowance or application model, but not both (e.g., mother is of Hispanic ethnicity). In general though, the differences in the estimated coefficients are relatively small even for those coefficients that differ in significance across models. The largest change is for the "lives with mother only" variable. In the allowance model, the estimated coefficient for those who live in mother-only families is positive and insignificant, whereas in the application model it is positive and significant. There is also a modest difference in the estimates for the odds ratios associated with these coefficients (3.3 for applications vs. 1.8 for allowances).

Effects of State-Level Factors

The pattern of state fixed effects estimates is very similar to that in the child applicant models. Of the 15 states with the highest fixed effects, 11 are southern. In general, the relative odds ratios are also similar across application and allowance models, and are highest for Kentucky and Mississippi.

We find similar patterns of coefficients for the state program and economic variables in the allowance models as in the application models. We find a very large, significant coefficient for the ATBRR variable that we suspect reflects a collinearity problem with the duration and panel dummies as in the adult models. We also find that the second lag of the unemployment rate is positive and significant in both models. The sum of the three unemployment rate coefficients is just slightly smaller than the corresponding sum from the application equation, suggesting that applications induced by a recession are no more nor less likely to be allowed than others.

There are two differences in the estimated coefficients on the state variables in the application and allowance models. First, the estimated coefficient on the lag of the unemployment rate is negative and insignificant in the allowance model, whereas it is positive and significant in the application model. The magnitude of this difference is very small, however, when the point estimates for the odds are compared (0.94 in the allowance models vs. 1.2 in the application models). Second, we find a negative and significant effect for the California welfare reform dummy at the 10 percent level. This result is surprising because we expected that the effect of welfare reform on allowances would be positive. One problem in interpreting the coefficient on this variable, as well as other welfare reform variables, is that we do not explicitly control for the changes in policy associated with *Zebley*. It may be that the effect of *Zebley* is confounded with that of these states' welfare reforms.

Time Interactions

The coefficients of the interactions between the AFDC participation probability and the year dummies in the allowance model are generally larger than the corresponding coefficients in the application model. The coefficients for the interactions in the allowance model are largest in

1992 and 1993, whereas they are largest in the application models in 1994. The pattern of coefficients suggests that the allowance rates for high probability AFDC cases increased relative to those for low probability cases early in the period, but that this increase was not sustained through the end of the period. It is interesting to note that we find this same pattern in the allowance models for young women.

VII. CONCLUSION

A. Descriptive Analyses

The matched SIPP/SSA data provide the opportunity to examine the intersection of the populations served by AFDC and SSI, and how that intersection has changed since the respondents were first observed in SIPP (1990–1993). We have found that samples sizes are large enough to obtain reasonably accurate estimates of recipient characteristics in four adult age/sex groups, plus children, in each of the four SIPP panels that have been matched. If we pool the samples for all four years we can obtain reasonable sample sizes for both those who have applied for SSI since first being observed in SIPP (post-SIPP applicants), as well as for the smaller number who received their first payment after being observed (post-SIPP recipients).

The matched data show there was a substantial intersection between the populations served by SSI and AFDC at the time the SIPP data were collected, especially among young women and children. They also show that the extent of the intersection grew over the 1990–1993 period and beyond; i.e., that there was a substantial shift from AFDC participation to SSI participation. While young female SSI recipients during the sample period were similar to young male recipients as well as older recipients in many respects, they were much more likely to be living with their own children, to have received AFDC benefits in the past, and to live in a family that was concurrently receiving AFDC benefits. Further, the share living in an AFDC family increased over the period. Post-SIPP applicants and recipients in the young-female group were both more likely than existing SSI recipients to have received AFDC benefits in the past.

Patterns are similar for children. Over half of all SSI children in the 1990–1993 period lived with just one parent, and a large share lived in an AFDC family. The share living in an AFDC family when first observed in SIPP is even higher among post-SIPP applicants and recipients.

The data also show that substantial numbers of young female and child AFDC recipients reported a disability when observed in SIPP. While the shares of AFDC recipients reporting a disability are much smaller than for SSI recipients in the corresponding demographic groups, the numbers with disabilities are large because these shares apply to large numbers of recipients. Further, it is clear from the disability information for those respondents who were SSI recipients when observed that disability is substantially under-reported in SIPP, especially for children.

Most of the findings in the assessment of target and comparison groups are discouraging, and we conclude that defining deterministic target and comparison groups is quite problematic. While it might be reasonable to make comparisons between low-income parents with disabilities and non-parents with disabilities, this would ignore a substantial share of those targeted by non-SSA welfare reforms that might apply for SSI.

At the end of the last chapter, we concluded that it is misleading to think of the years from 1988 to 1996 as a "baseline" against which to measure the impact of the reforms. The analysis

presented here reinforces this conclusion. It appears that substantial numbers of adults and children were shifting from participation in AFDC to participate in SSI well before the reforms that began in 1996. It is not clear that participation patterns had reached any sort of long-run equilibrium prior to the reforms, or that the forces behind participation shifts had stabilized in any meaningful sense. An evaluation can ultimately compare participation patterns after the reforms to "counterfactual" participation patterns that are projected from the pre-reform data, but the dynamics of the pre-reform period place a heavy burden on the modeling effort required to make credible counterfactual projections.

B. Hazard Analysis of SSI Applications and Allowances

The estimates of hazard models for first SSI applications and allowances that are presented in this chapter demonstrate the feasibility of estimating such models using pooled SIPP/SSA administrative data, and also provide some interesting findings. The models provide important information on the effects of individual level factors on applications and allowances, but are limited in estimating effects of state-level factors (e.g. state AFDC program changes). Our results also reinforce the conclusion that it is problematic to use the experience just prior to the reforms of 1996 as a baseline for post-reform experience.

In general, many characteristics of individuals in low-income families that were observed when each SIPP respondent was first interviewed are predictive of first applications and allowances, and their coefficients' signs are generally what we would expect. Disability and health variables are especially predictive, but education, family status, program participation and income variables also have substantial predictive power. For children, parental characteristics are important predictors.

We find that first SSI applications and allowances from young women and, to a lesser extent, children are positively associated with current and/or past AFDC participation after controlling for the other explanatory variables. We do not find an effect for young men, but this likely reflects the relatively small number of young men who reported current or past AFDC participation.

We also attempted to identify the effects of some state-level variables on applications and allowances. The economic and program variables in most cases had insignificant coefficients. Our experimentation with state dummies for specific AFDC reforms yields similarly unsatisfactory results. Our impression is that further development of the models in this direction will not be very fruitful, because there are very small numbers of SIPP respondents who filed a first SSI application or received a first allowance in each state during each year. Further, because TANF reforms vary substantially by state in their nature and timing, we conclude that future analysis of the SIPP/SSA matched data is not likely to produce findings of changes in SSI applications and allowances that can be closely tied to TANF.

In one specification that allows for temporal shifts in the hazards for "high probability" AFDC participants relative to low probability AFDC participants, we find evidence of a substantial upward shift in both the application and allowance hazards for the former relative to the latter from 1991 through 1995, for young women and children. It appears that in 1996 the relative hazards for high and low probability AFDC cases were approximately the same as in 1990.

Similar results were not found for men, but there were too few male AFDC participants in the sample to obtain a meaningful result.

In another specification for young men and young women, we allowed for temporal shifts in the hazards for those living with their own minor children relative to those who were not, other things constant, and a similar pattern of shifts emerged for both men and women in the application equations. That is, application hazard rates increased for those with children relative to rates for those without children during the 1991 to 1995 period, but essentially returned to their 1990 relative values by 1996. A similar finding was obtained for young women in the allowance equation, but for men the finding was essentially the opposite – a downward shift in allowances for men living with children relative to others. This last finding is puzzling.

This evidence provides additional support for the conclusion that a variety of factors caused a shift in participation from AFDC to SSI among young women and children during the pre-reform period. The application equation estimates for young women and men discussed in the previous paragraph suggest that for young women the shift had as much to do with whether they were living with their children as it did with AFDC participation. Spillover effects from *Zebley* seem a likely explanation, but administrative changes to the program, as well as various outreach efforts and the economy, may have had a disproportionate effect on applications from parents.

The estimates of the models in which we allowed for shifts of the hazards for high probability AFDC cases relative to low probability cases, or of the hazards for young adults living with children relative to those not living with children, illustrate the feasibility of estimating models in which hazard rates for one population increase relative to those for another. Because the reforms associated with TANF are much more likely to impact SSI applications and allowances from high probability AFDC/TANF cases than from low-probability cases, it may be worthwhile to pursue an evaluation option that takes this approach in the future. It should be noted, though, that this approach by itself would not be able to cleanly distinguish between the effects of welfare reforms on the relative hazard rates and the effects of other factors that may well change in the future.

One other factor that needs to be considered in any future analysis is the diversionary effects of TANF reforms. Presumably many potential TANF recipients are being diverted away by states, and some are likely being diverted to SSI. Hence, individuals "shifted" from TANF to SSI might never actually appear in TANF caseloads. Use of a probability of AFDC participation model estimated from pre-reform data will address this issue, although early diversionary efforts in some states could make this problematic. Use of a living with children indicator might be preferred for this reason.

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CHAPTER 6
EVALUATION OPTIONS

I. INTRODUCTION

A. Objectives

We present a series of options for evaluating the impacts of welfare reforms on SSA programs. Options are proposed for estimating the impact of non-SSA reforms alone, and for estimating the combined effects of all recent SSA and non-SSA reforms. Several important considerations guided our development of the evaluation options:

- There is a strong consensus among the state and local people we interviewed during our site visits that the conversion of AFDC to TANF and the resulting strict work requirements and time limits had the greatest potential for producing a significant effect on SSA programs. There seems little reason to consider other non-SSA reforms at this time.

- Most of the impacts of non-SSA reforms will be on SSI and any effects on DI are likely to be via concurrent cases only. The only SSA reform that directly impacts DI is the DA&A reform. Even in this instance, 79 percent of the beneficiaries directly affected were SSI recipients, including concurrent recipients (***Lewin, 1998a***). Hence, apart from the evaluation of the effect of DA&A reforms on DI-only cases, it seems sensible to focus evaluation efforts on SSI, with auxiliary analyses of DI where feasible.

- It will be easier to detect the impacts of non-SSA reforms on applications and allowances than on caseloads or payments. Hence, it seems sensible to focus initial evaluation efforts for the effects of non-SSA reforms on applications and allowances.

- It is important to have realistic expectations about the information that a future evaluation can produce. It is unrealistic to expect accurate estimates of the total impacts of all reforms, or of specific non-SSA reforms alone. As was demonstrated by our efforts to model the pre-reform period, it is extremely difficult to account for more than a modest proportion of the factors that are responsible for changes in SSI applications and allowances over time. It is also very difficult to accurately control for the effects of factors such as the economy. Further, two groups, certain children and substance abusers who are parents, are affected by both SSA and non-SSA reforms. This leads us to doubt that any future effort can produce accurate nationwide estimates of the impacts of the non-SSA reforms alone on SSA programs. There is, however, much that can be done to obtain useful information about the interactions between SSA and non-SSA programs, the intersection between the populations they serve, and how they both are changing over time because of program changes and other factors.

- The best way to rigorously evaluate the impacts of non-SSA reforms on SSI is by building on experimental welfare evaluations currently underway. Even though these evaluations will

not produce nationwide estimates of the impacts of reforms, they offer a unique opportunity to establish a causal relationship between specific TANF reforms and SSI outcomes.

B. Summary of Options

The four evaluation options outlined below and described in detail in the remainder of the chapter are designed to achieve the best understanding of the effects of reform that is practical. SSA may choose to pursue some or all of these options. They can be implemented independently of one another or so that the results of various approaches complement and support one another. The first option can provide information for every state as well as the nation as a whole, the second can provide national information and possibly information for some large states, and the final two take advantage of opportunities that are only available in selected states.

1. Analysis of SSA Administrative Data

This option would use SSA administrative data to produce estimates of the impacts of TANF on SSI applications, allowances, caseloads, and benefits, along with collateral estimates of impacts on DI outcomes for those who apply for SSI. It would also produce estimates of the combined impacts of TANF and DA&A reforms on outcomes for those adults who were not SSI recipients at the time the reform legislation was enacted, as well as the combined impacts of TANF and SSI child reforms on outcomes for those children who were not SSI recipients at the time the legislation was enacted. Initial estimates for each post-reform year would be based on age-sex adjusted comparisons of changes in outcomes for target and comparison groups within each state. This would produce time series of estimates for each state, which could be aggregated to obtain national estimates. The reforms might explain any differences observed, although there will inevitably be competing explanations. The state estimates for the impacts of TANF would help SSA detect substantial shifts in SSI applications from, and allowances to, TANF recipients in each state, whether or not they could be definitively attributed to TANF reforms.

SSA could also conduct a pooled time-series analysis of the estimates, to better assess the extent to which TANF reforms and other factors, (e.g., the economy) contributed to the observed shifts. While the marginal value of the pooled time series analysis might be limited, the cost might also be low.

This option also includes a sub-option for evaluating the impact of new restrictions on SSI eligibility for non-citizens.

2. Analysis of Census/SSA Matched Data

The analysis of applications and allowances presented earlier can be extended to produce a second national estimate of the impact of TANF reform on applications and allowances, and auxiliary equations can be developed to generate caseload and benefit estimate. As with Option 1, it will be difficult to disentangle the impacts of TANF from the impacts of other factors on application behavior by TANF recipients. At a minimum, however, it would help SSA detect shifts in participation from TANF to SSI, no matter what the cause. It would also help validate

the national estimates from Option 1. The ability of this option to assess effects in individual states would be very limited.

The matched data can also be used in a relatively simple fashion to estimate the total impacts of the reforms on SSI caseloads in post-reform years, again with the *caveat* that the impacts of "other things" may affect the estimates. They might also be used to improve the analysis of SSA administrative data.

3. State Welfare Reform Evaluations

SSA could select a group of state welfare reform evaluations that are currently underway, and work with existing contractors and states to evaluate the impact of the reforms on SSI. We provide information about the 11 most promising candidates for such "add-on" work, all of which have experimental evaluation designs. These studies would provide methodologically sound estimates of reform impacts in these states. They also would validate the estimates produced under Option 1.

4. State Case Studies

SSA could select states for case studies on the basis of interesting reforms and the availability of data on individuals targeted by TANF reforms. These studies would include both qualitative and quantitative evaluations. The qualitative evaluations would be conducted via structured interviews of key informants. The quantitative evaluations would use SSA data that have been matched to state data from one or more of the following sources:

- Survey and administrative data from the Welfare Leavers studies (14 states or counties);
- Surveys of low-income families in 13 states under the New Federalism project; and/or
- State administrative records.

Such data could be used to produce state estimates that are similar in concept to those described on Option 1, but that take advantage of important information that is not in the SSA data. These would also help validate the Option 1 estimates. We provide information about the states that are the most promising targets for this type of study, and develop a preliminary analysis plan.

In our *Literature Review and Design Report* (***Lewin, 1998b***), we included pooled time-series analysis of state application and allowance data, perhaps by age and sex, as a possible primary option. In the options recommended above, pooled time-series analysis is limited to a secondary analysis of the individual state estimates of impacts on applications and allowances derived from SSA administrative data. Although significant improvements can likely be made over the exploratory analysis of the pre-reform period that we presented in Chapter 4, we do not have confidence that the pooled time-series approach can adequately disentangle the effects of reforms from the effects of many other factors that will affect applications and allowances over the period. While cross-state variation in all of these factors offers, in principle, the opportunity to estimate their individual impacts, our ability to measure this variation is too limited for the task at hand.

Instead, we are recommending heavy reliance on within-state analyses that compare changes in outcomes for target and comparison groups. These, too, have limitations, but they also have three distinct advantages over the pooled time-series approach. First, there are opportunities to validate and improve these estimates in some states, provided by the third and fourth options. Second, they potentially control for all factors other than the policy changes that have different impacts on the target and comparison groups, whether or not the factors can be observed. Third, specification errors in one state will not contaminate the estimates in all other states. Further, the evaluator can still use the pooled time-series methodology to help interpret, and refine, the within-state estimates, as we suggest here.

In Section II we discuss the conceptual framework for an evaluation. This is a revision of a discussion that appears in Lewin (1998b), and provides a useful point of reference for the options. The four options listed above are presented in detail in Sections III through VI, respectively. In Section VII we discuss other data sources that we have assessed, some of which may also have value for the evaluation. We discuss the complementarity of the options and their relative strengths and limitations in Section VIII.

II. CONCEPTUAL FRAMEWORK

A. Overview

In this section we discuss each of the following conceptual issues:

- Counterfactual Outcome Series;
- Dynamic Relationships among Primary Outcome Variables;
- DI Outcomes;
- Target and Comparison Groups; and
- Delayed Impacts.

These provide a framework for the evaluation options.

B. Counterfactual Outcome Series

The reforms will have an impact on caseloads, benefit payments and other outcomes every year for the indefinite future, and the size of the impact will vary each year. Hence, it is important to conceptualize the overall objective of the design as estimating and projecting outcome series over the post-implementation period under various policy scenarios.

For each outcome of interest, we would like to compare the series for the outcome under current policy (series A) to estimated series for the following counterfactual scenarios: no policy change (series B); SSA reforms only (series C); and non-SSA reforms only (series D). In ***Exhibit 6.1***, we illustrate each of these counterfactual series for a hypothetical outcome.

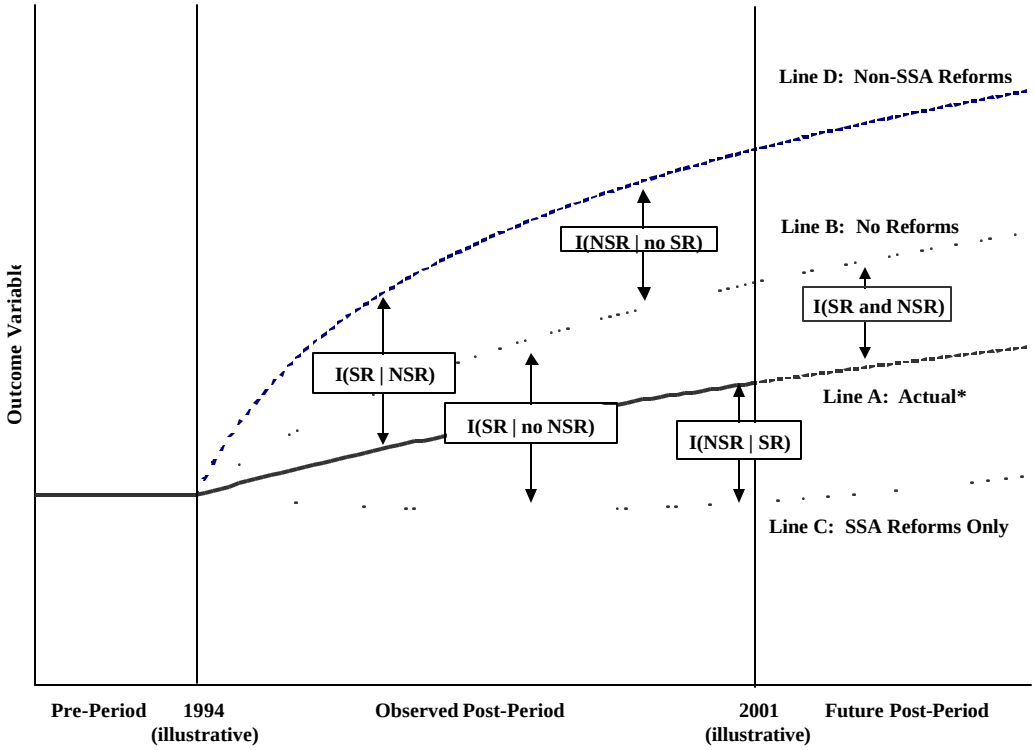
For illustrative purposes, assume the outcome measured in Exhibit 6.1 is SSI caseloads, that impacts on SSI caseloads from SSA reforms are negative, that impacts from non-SSA reforms are positive, and that the magnitude of the impact on SSI caseloads is larger for SSA reforms.

For illustrative purposes, we measure the impact of SSA and non-SSA reforms in comparison to the policies that were in place in July 1994, before the first DA&A policy changes (see ***Appendix A)***. If the welfare reforms were never implemented, series B would represent future SSI caseload trends based on policies that existed in July 1994. Deviations from series B represent the impacts of SSA and/or non-SSA reforms, and the evaluators task is to estimate the differences between various pairs of these series. The total impact of all policy changes is represented by the difference between series A and B – denoted I(SR and NSR) in the diagram.

There are two ways to define the impacts of the non-SSA reforms alone. The first is the impact given no SSA reforms, I(NSR | no SR), (the difference between series B and D). The second is the impact given the SSA reforms, I(NSR | SR), (the difference between series A and C). The latter is expected to be smaller than the former because the two major SSA reforms (concerning DA&A eligibility and child eligibility) likely discourage applications from individuals who might otherwise be induced to apply by the non-SSA reforms, and might also reduce allowance rates for those who apply anyway. Estimating the former is more difficult than the latter because it involves a comparison of two counterfactuals. As a practical matter, the options focus on producing estimates of the impact of non-SSA reforms given the SSA reforms – i.e., I(NSR | SR). This impact is likely the most interesting one to SSA policymakers because it describes how non-SSA policies affect SSA programs given current SSA policy.

An estimate of I(NSR | SR) along with an estimate of I(NSR and SR) implies an indirect estimate of the impact of the SSA reforms given no non-SSA reforms: I(SR | no NSR) = I(NSR and SR) – I(NSR | SR). This may be compared to direct estimates of the impact of SSA reforms, developed by others. Comparability will depend, in part, on whether the direct estimates are conditioned on the non-SSA reforms. If the direct estimate is for I(SR | NSR), we would expect them to be smaller in absolute value than the indirect estimate of I(SR| no NSR). Also, a direct estimate of I(SR | NSR) can be used along with an estimate of I(SR and NSR) to produce an indirect estimate of the impact of the non-SSA reforms given no SSA reforms: I(NSR | no SR) = I(NSR and SR) – I(SR | NSR). While this estimate may be of less interest to SSA policymakers, it would still be of general interest to know the extent to which the impacts of SSA and non-SSA reforms offset each other, and the information could be of future value to budget and policy analysts.

Exhibit 6.1
Counterfactual Outcome Series Over the Post Implementation Period Under Various Policy Scenarios*



*Line A represents the actual behavior of the outcome variable during the observed post-period and the projected behavior of the outcome variable in the future post-period.

The definition of counterfactual policies requires further discussion. If the objective of the evaluation were to evaluate the impacts of the policy changes induced by the specific federal legislation that is the focus of this project, then the counterfactual policies would be those policies that would be in place if the legislation had not been passed. For SSA reforms, these policies would presumably be the policies that were in place before the legislation. This is not true for non-SSA policies. As discussed in previous chapters, state AFDC programs were changing under federal waivers, some states were implementing other policy reforms in the period before PRWORA was passed, and such reforms likely would have continued had PRWORA not been passed. Determining what these counterfactual policies would have been, and what SSI caseloads would have been under those policies, is virtually an impossible task.

The only practical way to define the counterfactual policies, including state level policies, is to define them as those that were in place in some "base" period, before any of the legislation was passed. To be more accurate, the policy "in place" in a given period should be defined to include recent policy history as well as expected future policies because current behavior depends on both past policies (most recipients in any year became recipients in a previous year) and expected future policies (e.g., anticipated tightening of eligibility for DA&A or child SSI cases).

The definition of post-reform policy is also an issue because the policies of interest changed gradually, and some of the initial changes were partially reversed after a short period. TANF reforms, especially, are being implemented in varying ways and times across states, and it is seems likely that policy changes will continue for some time. The only practical way to define the "post" policy is by the policy that happens to be in place in a given period. That is, for practical purposes the best an evaluation can hope to do is to compare outcomes under current policy in each period to outcomes under the policies in place in some base period. Thus, for instance, the evaluation might be able to answer questions such as "How much of the change in an outcome from 1994 to 1998 can be attributed to changes in welfare policy under TANF?" The evaluation will not be able to answer questions such as "How much different would a 1998 outcome have been from its actual 1998 value had PRWORA not been passed?"

Because the first DA&A legislation was passed in July of 1994, 1993 is the first full calendar year before any reform and the policies in place in that year are a reasonable counterfactual for evaluating the impacts of all reforms. The impact of the early DA&A legislation was likely small in comparison to the legislation passed in 1996 (both the later DA&A legislation and PRWORA). Several states made significant policy changes between 1993 and 1996 (AFDC, GA and others), so for the purpose of studying the impact of TANF, especially, 1995 or even 1996 might be preferred to 1993 for establishing the counterfactual policies. The best option, if feasible, is to try two or three alternative base periods and assess the sensitivity of findings to the choice.

Several of the evaluation options we propose rely on a difference-in-differences (DID) methodology. In general, successful application of DID requires comparison of outcome changes for target and comparison groups from a period that is sufficiently pre-intervention to avoid anticipation effects, to a period that is sufficiently post-intervention to sufficiently capture delayed impacts. Application of the methodology to reforms of interest is problematic because they are phased in and because many of the impacts – especially for TANF – are expected to be substantially delayed. Further, for TANF the phase-in schedule and the impact delays vary substantially across states. Choosing pre and post periods that meet these strict requirements is problematic because the further apart the two periods are, the greater the likelihood that other factors will have differential impacts on the two groups – violating another requirement of DID analysis. Hence, when feasible, we recommend constructing continuous series of DID estimates from before the first of the reforms (no later than 1994) to at least five years after PRWORA (i.e., 2001), to capture what are likely to be phased-in impacts. The possible influence of other factors on these estimates should then be carefully assessed.

C. Dynamic Relationships between Primary Outcome Variables

The outcome variables of primary interest are benefit payments, caseloads, applications, allowances, and terminations. These outcomes are related to one another through a series of dynamic accounting equations (see ***Appendix F***). In brief, allowances in a period depend on the number of applications and the share allowed. Caseloads in a period depend on allowances in each past period ("allowance cohorts") and the share of each allowance cohort that continues to receive payment in the current period. Current benefit payments depend on current program rules and the characteristics of the current caseload. All of these relationships depend on policy history

and the history of external factors that have an impact on applications, allowances and continuation of eligibility.

TANF is not likely to have a measurable impact on SSI outcomes for those who were SSI recipients at the time of PRWORA's passage ("existing recipients"). It is possible, perhaps likely, that TANF might induce some SSI recipients who, in the absence of TANF, would have lost their SSI benefits for various reasons, to stay on the rolls for a longer period. For practical purposes, however, it seems reasonable to ignore any such impact. Hence, we ignore the impact of TANF on existing recipients.

In contrast, the largest immediate impacts of SSA reforms were on terminations of benefits to existing child and DA&A recipients. These reforms are probably also having substantial impacts on the flow into SSI of those who were not recipients at the time the enabling legislation was passed. The evaluation of the total impacts of SSA and non-SSA reforms needs to focus on those who were not existing recipients because all of the reforms affect this group. Impacts of the SSI child and DA&A reforms on existing recipients are being evaluated separately.

D. DI Outcomes

As argued in the introduction the evaluation of non-SSA reforms should focus on SSI cases only, although DI outcomes for concurrent cases should also be explicitly considered. DI outcomes for SSI applicants can be thought of as SSI applicant characteristics (e.g., percent also applying for DI, percent allowed for DI, etc.).

Over the longer term, TANF reforms may shift payments from SSI to DI through the following mechanism. If the reforms increase the employment of low-income parents in jobs covered by Social Security, then the share of the population that is insured for disability will eventually increase, especially for women. Some of these individuals will qualify for disability payments in the future, perhaps following the later onset of a disability, and the share who will receive at least part of their payment from DI will be higher than it would have been in the absence of the policy change. This will result in a shift in payment costs from general revenues, under SSI, to the DI Trust Fund. Total program costs could increase, but only if the earnings of those affected are high enough to obtain a total payment in excess of the SSI maximum. While it is important for SSA to be aware of this issue, evaluation of the impact would be premature until there is credible evidence that the reforms are increasing covered employment. Evidence from several experimental evaluations discussed later in this chapter may demonstrate that outcome. If so, SSA may want to consider impacts on Trust Fund revenues, insured status of the population, future Trust Fund payments.

E. Target and Comparison groups

Each of the SSA and non-SSA reforms target specific groups of individuals. The three major reforms of interest have as their target groups:

- SSI and DI DA&A reforms: Recipients and applicants or potential applicants whose drug abuse or alcoholism is material to their disability;

- SSI child eligibility reforms: Recipients and applicants or potential applicants whose disability is based on "maladaptive behavior" or an individual functional assessment;

- SSI benefits for non-citizens: initial reforms made most non-citizens ineligible, but later revisions only made those who immigrated after August 22, 1996 ineligible; and

- Non-SSA reforms: The main reform of interest, TANF, targets members of low-income families with children. Although there are significant exceptions, most such families are one-parent families, and the one-parent is most often a young woman.

Because the reforms are targeted at specific groups, an evaluation that focuses on the target groups will have a better chance of success than one that considers all potential SSI recipients. Further, potential SSI recipients not in target groups can serve as comparison groups in the evaluation – especially if they are similar to those in the target groups in other ways. Use of comparison groups will be very important to a successful evaluation because other significant factors are likely to have an impact on the key outcome variables over the period under study, and because the impacts of those factors will be difficult to measure directly.

To the extent feasible, we incorporate comparison groups in each of the quantitative evaluation options that follow. Options are limited by the data. Because questions are likely to be raised about the validity of any comparison ("natural control") group, each option should include multiple target – comparison group pairs when feasible.

Because non-SSA reforms vary substantially across states, there is some merit in essentially using states as comparison groups for one another. An important limitation of this approach, however, is that it requires the evaluator to accurately characterize the variation in the nature and timing of reforms across states. Another limitation is that changes in the "other factors" that need to be controlled vary across states. Econometric methods may be used to at least partially control for these, but both our earlier experience and the pre-reform analyses presented in this report indicate that substantial residual differences will remain. While the use of measurable cross-state variation in the non-SSA reforms can enhance the evaluation, we would be skeptical of findings that relied primarily on such variation to measure the impacts of the reforms.

The evaluation needs to compare *changes* in outcome variables for target and comparison groups – essentially using earlier period values for the same groups to control for initial outcome differences. Comparison of post-reform outcomes for target and comparison group cases that do not net out differences in pre-reform outcomes are likely to be misleading because differences at any point in time may be caused by differences between target and comparison groups that are unrelated to policy. Thus, for instance, there would be no value in using the difference between post-period SSI allowances to young women from TANF families to post-period allowances to other young women. There would be value in comparing pre-post changes in allowances to young women from AFDC/TANF families to changes for other young women. Essentially, outcome changes for the comparison group are used to represent the counterfactual for the target group, and the difference between outcome changes for the target and comparison groups is the estimate of the impact of the reform.

There is considerable overlap between the various target and comparison groups. This is most obviously true for children: the SSA child eligibility reforms target children from low-income families who have specific types of conditions, while the AFDC/TANF reforms target low-income families with children. Some parents in the AFDC/TANF target families may also be affected by the DA&A reforms.[267] All of these target groups include both citizens and non-citizens.

As mentioned above, it is not feasible to fully estimate the impact of non-SSA reforms given no-change in SSA policy. The evaluation might, however, make some assessment of this impact by using the intersections of the various target groups. For example, it would be useful to distinguish among: children affected by both the AFDC/TANF reforms and the SSA child reforms; children affected by just the TANF reforms; and children affected by just the SSA child reforms. This will be difficult because the distinguishing features of children in these groups are not cleanly observed in most data. SSA administrative data for existing recipients are somewhat of an exception in this regard. The categories of child SSI recipients that have been eliminated by the SSI child reforms are fairly cleanly defined. Even here, however, there is ambiguity because many children in these categories at the time of the reforms could have qualified in other categories, and some now have. An analogous statement holds for DA&A cases. Worse yet, the post reform data do not clearly identify applicants who would have been allowed under the pre-reform child and DA&A rules.

F. Delayed Impacts on Applications and Allowances

The impacts of reforms on applications and allowances may be delayed substantially. Specific reasons are:

- The many changes in both SSA and non-SSA programs have different implementation dates, so even if effects of individual reforms were immediate, there would be a gradual transition to full effects;

- TANF life-time limits in most states will not be binding for several years, although they may have earlier impacts as families save their time-limited payments for hard times. TANF work requirements are just now starting to bind in most states;

- The currently strong economy may be offering relatively favorable opportunities to many individuals targeted by the reforms who might otherwise seek disability payments. Perhaps just as important, the relatively strong fiscal position of most states may delay efforts to shift TANF recipients onto SSI.

We are concerned that the evaluator may find only small effects of the non-SSA reforms in the immediate future because of these factors, leading policymakers and others to conclusions that neglect what might happen should the economy enter a significant recession. Hence, we favor a design that looks carefully for effects where they are most likely to occur in the short run, and that later evaluates impacts over a much longer period.

[267] One study found that 15 percent of adults in AFDC households were substance abusers (Adler, 1993).

G. Change in Timing of Allowances

Both SSA and non-SSA reforms may accelerate allowances to some individuals who would have received allowances eventually. Even before the non-SSA reforms, substantial numbers of adults and children transitioned from AFDC to SSI every year. Hence, in measuring the impact of TANF of the SSI caseload, or of all reforms on the caseload, we cannot simply assume that increases in allowances induced by the reform translate into future caseload increases after adjustment for attrition. While it will be difficult to identify changes in the timing of allowances directly, it is feasible to produce estimates of caseload impacts for the observed post-observation that implicitly adjusts for such behavior.

III. ANALYSIS OF SSA ADMINISTRATIVE DATA

A. Overview

In this section we present an evaluation option that relies almost exclusively on SSA administrative data. This option would use SSA administrative data to:

- Produce state and national estimates of the impacts of TANF on key SSI outcomes (applications, allowances, caseloads and payments);
- Produce state and national estimates of the combined impacts of the TANF, DA&A and child SSI eligibility reforms on key SSI outcomes for those who were not SSI recipients at the time of the reforms;
- Produce state and national collateral estimates of the impacts on DI outcomes for those who apply for SSI; and
- Produce a first-cut analysis of the impacts of non-citizen reforms, just at the national level.

The initial state estimates for the main SSI outcomes would be based on age-sex adjusted comparisons of changes in outcomes for target and comparison groups within each state ("difference-in-differences," or DID estimates). These would produce time series of estimates for each state (i.e., estimates of impacts for each observed post-reform period). The state estimates could be aggregated to obtain national estimates. We describe this analysis in Section B.

We also describe the first-cut analysis for the impact of non-citizen reforms in Section B, which uses the DID methodology at the national level. Because the initial non-citizen reforms were largely reversed by the BBA, the impacts have become a lower priority for SSA. The first-cut analysis is likely to confirm that effects are small.

While TANF might explain the DID estimates for the impact of TANF, there will inevitably be competing explanations. Even so, the series will be valuable because they will help SSA detect substantial shifts in SSI applications from, and allowances to, TANF recipients in each state.

As stated above, the initial estimates are in the form of time series for each state for the observed post-reform period. SSA might want to construct the same series over the pre-reform period, and

then conduct a pooled time-series analysis of the estimates over the pre- and post-reform periods. This analysis would assess the extent to which TANF reforms contributed to trends in the estimates, and control for changes in the economy and possibly other factors that are controlled for imperfectly in DID analysis. The marginal value of the pooled time series analysis could be limited, but the marginal cost, given that the DID estimates have already been constructed, would likely be low. The analysis would produce refined estimates of the impacts in each state, as well as nationally.

B. Difference-in-Differences (DID) Analyses

1. Methodology

This part of an evaluation would consist of a series of fairly simple "difference-in-differences" (DID) analyses of applications and allowances using SSA administrative data. Most of these analyses would focus on TANF reforms, while others would focus on non-citizen reforms. Over time, DID analyses could be extended to caseload and benefit comparisons.

Overview of Target-Comparison Group Pairs

We have focused on using information in the Supplemental Security Record (SSR) for the purpose of defining target-comparison group pairs.[268] We have identified the following promising variables for defining target-comparison group pairs: AFDC/TANF income for all applicants at the time of SSI application; immigration status for all applicants at the time of application; parental characteristics for all child applicants at the time of application; family structure information for adult applicants who receive allowances at the time of award; diagnostic information that identifies child applicants who receive allowances and were targeted by the child SSI reforms at the time of award; and similar information that identifies allowed applicants who were targeted by the DA&A reforms. We describe this information and how it may be used later in this section. Most of this information is found in the SSR, but some must be obtained from other sources.

Basic Methodology for Applications and Allowances

DID analysis compares *changes* ("differences") in outcomes (applications and allowances) from a period before the policy change (pre-period) to a period after the policy change (post-period) for target-comparison group pairs. The difference between the outcome changes for a target-comparison group pair is the DID estimate for the impact of the policy change on the target group's outcomes for the post-period. Each DID analysis will produce a series of estimates, comparing outcomes from a series of post-periods to the selected pre-period.

DID analysis is usually applied to percent changes in outcomes, rather than changes in levels, because the pre-period outcomes for the target and comparison groups may be at quite different levels (e.g., applications from parents and non-parents). The assumption is that the outcomes for the two groups would have grown at the same rate in the absence of the policy change. The

[268] The SSR is the SSI administrative file that is most accessible for purposes of the evaluation.

estimated change in the level of target group outcomes due to the policy change is computed by multiplying the percentage change estimate by the base period outcome for the target group. [269]

Periodicity

DID analysis could potentially be performed using monthly data. Variation in the number of working days in a month introduces substantial noise into the series, which can be avoided by using moving averages, quarterly data, or even annual data. Use of annual data would minimize the effort required to produce the estimates, but it would be more difficult to relate the timing of policy implementation to the estimated effects on outcomes. In the remainder of this section, we assume that annual data are to be used unless otherwise indicated.

Controlling for Age and Sex

It is important to control for the age and sex composition of the target and comparison groups because:

- the age and sex composition of the groups will differ in most instances;
- SSI applications, allowances and caseloads vary by sex and age;
- the impacts of the policy changes are expected to vary by sex and age; and
- the age distribution of the population changes substantially over the period under study.

This can be accomplished by applying DID analysis to specific age-sex groups. The pattern of findings across age-sex groups is likely to be of interest in itself, and age-sex specific results can be aggregated to obtain estimates of the effects for all age and/or sex groups.[270] We recommend using age groups that are more narrowly defined than those we used in the previous chapter for adults; five-year ranges seem reasonable, with some variation due to critical program ages.

Small cell sizes may become a problem when age ranges are narrowly defined. Estimates for individual age-sex cells may become very unreliable or, worse, undefined. The latter happens when cells are empty for the pre-period, which is used as the base for computing percents. This problem will be especially severe if only a sample of applicants is used, and if quarterly, rather than annual, data are used – issues we return to later in this section. "Smoothing" techniques could be used to address the problem of small cell sizes for continuous variables such as age. These techniques are described in ***Exhibit 6.2***.

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[269] Mathematically, let A_{0t} and A_{1t} be applications from the target group in pre-period 0 and post-period 1, respectively, and let A_{0c} and A_{1c} be corresponding values for the comparison group. The percent change in a group's applications from period 0 to 1 is $\%\Delta A_g = 100 \times (A_{1g} - A_{0g})/A_{0g}$ for g = t, c. The DID estimate of the growth in applications from the treatment group that is attributed to the policy change, expressed in percentage points, is $D = \%\Delta A_t - \%\Delta A_c$. The level of the effect on target group applications is $L = D \times A_{0t}/100$.

[270] Continuing the previous footnote, let L_{sa} be the DID estimate of the change in the level of target group applications due to the policy change for those age *a* in sex group *s*. The aggregated estimate is:

Exhibit 6.2
Smoothing Techniques for DID Analysis

The evaluator could use smoothing techniques to address the issue of small cell sizes, if necessary. For instance, to estimate the effects of TANF on SSI outcomes for adult women from a pre-period to a post-period, the evaluator could:

- Fit a continuous distribution to the discrete age distribution for adult female applicants in each of the four relevant applicant groups (pre-period comparison, pre-period target, post-period comparison, and post-period target);[271]
- Use the fitted relationships to "predict" the number of applicants of each year of age in each of the four groups (i.e., produce a smoothed, discrete age distribution of applicants for each group).[272]
- Apply DID to the predictions, for each specific age, to produce estimated effects by individual year of age.
- Add results across ages to obtain estimates for age groups and all women.

The use of wide age ranges to avoid empty cells is a way to smooth applicant age distributions. The approach described can provide a better approximation to the age distribution for an applicant group, avoiding the arbitrarily located steps and flat plateaus of the commonly used method. While the commonly used method is simpler, using it for the purposes of this evaluation could be problematic for the reasons described above.

State-level Analyses

State-level analyses are warranted whenever feasible, even if the policy change analyzed is a national one, because changes in factors that might be confounded with the effects of policy changes also vary across state. That is, "within state" comparison groups should be used. Within state comparison groups are all the more important because of the fact that the non-SSA policy changes of interest vary across states.

Analysis at the state level allows comparison of the timing of the DID impact estimates to the timing of the implementation of various state reform features, as well as to the timing of changes in confounding factors. The application index graphs that appear in the previous chapter illustrate how that might be done.

A final reason for performing state-level analyses is that the quality of critical data may vary by state. As we discuss later, we are particularly concerned that information on AFDC/TANF receipt at the time of application might be poor in some states.

$$L = \sum_s \sum_a L_{sa} .$$

[271] These could be specific density functions, but it may be more practical and less restrictive to fit a polynomial function.

[272] For each group, the height of the estimated function at a specific age, a, can be used as the prediction. This should be a very close approximation to the area under the curve in the interval (a – 0.5, a + 0.5), which would be the correct way to produce the prediction if the function was a density function. If the curve for a group fits well, the sum of these predictions should be very close to the actual number of applications in the group. There will be discrepancies, however, so it would be sensible to multiply each fitted value by the ratio of actual applications in the group to the sum of the predictions.

SSA might find the fairly simple approach described to this point to be useful for ongoing monitoring of applications and allowances from TANF recipients. We would recommend using 1995 as the pre-period for this analysis, although it would be appropriate to assess the sensitivity of the estimates to use of either 1994 or 1996.

Other Applicant Characteristics, Including Those Related to DA&A, Child SSI, and Non-citizen Reforms

The target and comparison groups may differ by characteristics other than age and sex. SSI applicant characteristics observed in SSA administrative data include race, ethnicity, immigration status, impairment (all in the SSR) and pre-application Social Security earnings (in the Master Earnings File).[273] It is reasonable to think that impacts of TANF and other reforms may vary by these characteristics, just as they are likely to vary by age and sex, and in principal one could further disaggregate the DID analysis. Shrinking numbers of cases in each cell will limit the extent to which this is feasible. It might be best to disaggregate further in the four or five largest states, and not in smaller ones. Immigration status may be especially important in states with large numbers of immigrants, both because of the relatively high growth rate of the immigrant population and the policy changes concerning non-citizens. We present an approach to analysis of these policy changes later in this section.

Attempting to control for impairment differences is problematic because SSA policy changes often change the choices available to the adjudicators. When an applicant has impairments in multiple classes, the adjudicator must choose how to classify the applicant's impairment. Adjudicators are likely to list the impairment that can most easily be demonstrated to meet eligibility requirements, or that comes closest to meeting those requirements. Hence, when the requirements change, the classification of individual cases may change.

It is very important when considering the impact of TANF on SSI outcomes for adults to control for addiction disorders. If the DA&A reforms had differential impacts on the target and comparison groups for the TANF analysis, then the DID estimates of TANF impacts will be biased. Analogously, for analysis of the impact of TANF on child SSI outcomes, it is very important to control for the conditions that were targeted by the SSI child reforms.

It is feasible to control allowance, benefit, and caseload estimates for conditions related to the DA&A and child SSI reforms, but it might not be feasible to do so for application estimates. For the DA&A cases, we recommend using the substance abuse indicator.[274] All SSI recipients designated as DA&A before the DA&A reforms are identified by the codes for the SSR's

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[273] The RACE field in the SSR includes Hispanic as a possible response, as well as white, black and several other race or ethnic groups. Applicant tabulations from the 1% SSR Longitudinal File show that race is was not determined in 10.6 percent of cases (Pickett and Scott, 1996). Award tabulations for the same year show that impairment class is missing in only 3.9 percent of cases. Another characteristic that would be substantial interest is education. Education is obtained in the application process, but is not recorded in the SSR. It could potentially be obtained from the 831 File (ED). Education tabulations for SSI applicants from this file that were provided to us in the past by the Office of Disability showed relatively few missing or unknown values.

[274] This variable identifies DA&A cases and also identifies, by separate codes, cases in which substance abuse is known, but not material to disability, and others in which substance abuse is suspected. This information appears in the DRUGM field in the SSR.

substance abuse variable. We expect the variable to identify substance abuse for many other allowed cases even thought it was determined to be immaterial to disability.[275]

For children, RAND (1998) has developed a preliminary scheme for identifying cases targeted by the reforms as well as cases in groups to which a substantial share of existing child SSI recipients in the targeted group were reclassified after re-determination.[276] This scheme uses both the primary diagnosis code (PDC) and the Regulation Basis Code (RBC). While the PDC appears on the SSR, the RBC must be obtained from the 831 File. The evaluator should take advantage of RAND's experience in using these codes to classify cases. Any 831 File extracts prepared for the RAND evaluation might also serve the purpose of this evaluation option.[277]

In what follows, we ignore the impact of child SSI reforms on program outcomes for adults. The reforms will, however, reduce the number of SSI children aging into SSI adult status, and may increase applications and allowances for young adults who were not able to obtain benefits as children. Depending on the findings from RAND's evaluation, the evaluator may want to develop identifiers for young adults who are likely to have been in the target group for SSI child reforms when they were children, and control for this characteristic in some analyses.

Whether or not the evaluator controls for any of the other characteristics, it would be interesting to examine the impacts of the reforms on the characteristics of applicants, allowed applicants, and recipients. We return to how this can be done later after we discuss estimation of the impact on caseloads.

Estimation of Caseload Effects

There are two alternative approaches to estimating caseload effects. The first approach applies the DID methodology to administrative data for recently allowed recipients. The second uses a simulation methodology to project the counterfactual caseload for target group applicants that would have been allowed in the post-period, and then compares the counterfactual caseload to the actual caseload for target group cases allowed during the post-period.

The DID methodology described above can be applied fairly straightforwardly to analysis of the impact of TANF on the annual SSI caseload. For the moment we define caseload in a year as the number of individuals eligible for SSI in at least one month during the year ("recipients"). For the first post-reform year, the caseload estimates would be identical to the first-year allowance estimates. For the second post-reform year, the DID methodology would be applied to recipients in the second year who received their allowance in either the first or the second year. For the third post-reform year, the DID methodology would be applied to recipients in the third year who received their allowance in the first, second or third year, and so on.

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[275] Assessment of substance abuse by adjudicators continues to be important, both for determining materiality to disability and because special restrictions are placed on benefit payments to those with addictive disorders who are able to obtain an allowance for another impairment.

[276] See pp. 78 – 79 of RAND (1998) for a description of their preliminary scheme.

[277] The RAND (1998) design calls for extracting RDC from the 831 File for the entire 10% SSR sample at an unspecified point in time.

This methodology implicitly adjusts for the fact that some target group allowances induced by the reforms in the early post-reform period might be to individuals who would have received allowances later in the period, anyway, because these "advanced" allowances are exactly offset by a decline in later allowances. This is illustrated by means of a stylized example in ***Exhibit 6.3.***

One feature of the caseload estimation methodology that needs to be recognized is that when the time period for the estimate advances by one period, the earliest allowance date for those in the estimator's pre-period caseload moves back one period. Thus, while the caseload in a specific post-period reflects all the policies and other factors that have influenced caseloads in the entire period since the initial policy change, the pre-period caseload reflects these same factors over the same number of years before the policy change. If, for instance, the evaluator estimates the impact on the caseload in 2000, then the pre-period caseload used in the estimates will include individuals who received their allowances as a consequence of both the recession and a variety of policy changes that occurred in the early 1990s. For this reason, the interpretation of the DID caseload estimate will become more problematic as the estimate's time period advances.

EXHIBIT 6.3
Illustration of the DID Caseload Estimator

Suppose that:

- In each of the last three years before reform, 500 SSI allowances are made to individuals in the target group, and 500 are made to individuals in the comparison group.
- When an individual receives an SSI allowance, they continue as an SSI recipient for at least two years.
- In the absence of the policy change, annual allowances to the target and control groups would have continued at 500 per year through at least the first three post-reform years.
- The effect of the policy change in the first year is to increase SSI allowances to target group cases by 500 (i.e., to 1,000). The additional allowances include 300 individuals who would have received allowances in the second year anyway, and 200 who would not have received allowances until at least the third post-reform year, if ever.
- In the second year, total allowances to target cases drop to 600, including the 200 remaining cases that would have been allowed in the second year anyway, and 400 cases that would not have been allowed until at least year three, if ever.

In sum, the effect of the policy change on allowances in the first two years is that: 1) 300 allowances to target cases that would have been made in year two are made in year one; and 2) 600 allowances are made that would not have been made until at least year three (200 in year one and 400 in year two).

The DID estimate for allowances and caseloads in the first post-reform year will be 500 (SSI allowances to AFDC/TANF recipients increase from 500 in the pre year to 1,000 in the first post year, and allowances to others are unchanged). The estimate for the second-year caseload increase due to TANF will be 600: 1,000 TANF cases allowed in the first year plus 600 allowed in the second year minus the 1,000 allowed in the two years before reform compared to no-change for non-AFDC/TANF cases. Note that the estimate does not count the 300 allowances moved up from the second post-reform year to the first one as an addition to the second-year caseload.

The alternative approach, simulation of the counterfactual caseload for target group cases that would have been allowed during the post-period, would not rely on the pre-period data. The evaluator would estimate the number of counterfactual allowances during each post-period by

subtracting the DID estimates of allowances induced by the policy change from actual target group allowances, by age and sex. A sample of this number of actual allowances from each year would then be drawn to represent the counterfactual cases, and the actual continuation status in each period of those in the sample would be used to predict the continuation status of the counterfactual cases. The sample could be selected at random within age/sex cells. A refinement would be to use sampling weights that would make sample characteristics within age/sex cells match other predicted characteristics of cases allowed under the counterfactual. Prediction of the latter would require evaluation of the impact of the policy change on those characteristics, which we consider below.

While the simulation approach has the advantage of not relying on the pre-period data, it has the limitation of assuming that, conditional on observed applicant characteristics, continuation patterns are not affected by the policy change – an assumption that is not shared by the DID estimator.

Other Program Outcomes

Other program outcomes of substantial interest include SSI payments, concurrent DI eligibility (for adults), and concurrent DI benefits in each post-allowance period.[278] DI benefits should include dependent benefits, which might substantially add to any DI benefits obtained by a parent. Assuming the analysis is conducted with annual or quarterly data, it will also be of some interest to estimate impacts on the number of months of eligibility during the year. This will be necessary to convert annual or quarterly impacts to mean monthly impacts, in part because published program data are often in monthly units. Other characteristics of recipients could also be thought of as program outcomes, and SSA may find it useful to know how policy changes have affected recipient characteristics (e.g., age, sex, race, impairment, immigration status, and historical earnings).

Two outcome variables of substantial interest could be constructed from historical administrative data: expected lifetime benefit years and expected lifetime benefits. Historical analyses of length-of-stay on SSI that have been conducted previously show that duration is strongly related to age and impairment type.[279] It will be necessary to interpret the results with caution because the reforms could eventually have an impact on length-of-stay and lifetime benefits, holding observable factors constant.

A very simple way to estimate effects on other program outcomes would be to assume that the mean outcomes for all target group cases allowed in a given period (e.g., mean annual SSI payments, percent eligible for DI, etc.) also apply to those allowances induced by the policy change. This could be substantially incorrect, however, and it might be worthwhile to use the DID methodology to obtain refined estimates.

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[278] We include among concurrent DI cases those who are eligible for SSI before the five-month DI waiting period expires, but who lose SSI eligibility because of their DI benefits once they are DI eligible. This discussion intentionally neglects the impact on DI-only allowances, caseloads and benefit payments, which we have assumed to be small.

[279] See Rupp and Scott (1996, 1998).

The DID methodology can be applied to these other outcomes just as it was to SSI allowances and caseloads. Instead of comparing changes in the number of allowances or the caseload from the target and comparison groups, the evaluator would compare changes in the other outcomes for either those allowed, or those in the caseload and allowed post-reform, from the target and comparison groups. Thus, for instance, to estimate the impact on SSI payments in the first year, the evaluator would compare the percent change in SSI payments made to newly allowed cases from the target group to the percent change in payments made to newly allowed cases from the comparison group. In the second year, the evaluator would compare the same figures for recipients allowed in both the first and the second year.

For immigrants, the analysis needs to consider two additional issues: date of immigration (which is material to the policy changes) and growth in the (legal) immigrant population relative to the native-born population. We will return to these issues later in this section.

Using the SSR

As stated above, the analyses described would primarily use data from the SSR. The SSR is an enormous database, and the evaluator will need to be aware of many issues concerning use of these data. The following discussion of these issues is based on Pickett and Scott (1996).

Each month SSA produces a set of tables based on a 10% SSR sample.[280] These include tables for applications, allowances, recipients, recipient characteristics, and payments. Many are published in the *Social Security Bulletin*. SSA might find it useful to add new tables for some or all of the target and comparison group pairs described below, for the purpose of continually monitoring relative changes in outcomes for these groups.

While convenient, use of the 10% SSR for the evaluation has limitations. One is that cell sizes for application, allowance and caseload counts for target and comparison groups in each state will be quite small in some states every month – especially when divided into age-sex groups. This can be addressed by aggregating the monthly data to quarters or even years. While aggregation to quarters would not result in any substantial loss of information for the evaluation, aggregation to years might because it would be easier to associate changes in outcomes with implementation of new policies using the quarterly data.

A second issue is that caseload counts each month are based on payments actually made during the month, whether or not those payments are based on eligibility for the current month. When allowances are made, eligibility usually begins several months before the allowance date, so persons "paid" in a specific month do not coincide with persons "eligible" in the same month. Differences can be especially large when a policy change or other factor results in an increase or decrease in applications. Changes in allowances as measured by first payment may lag changes in allowances measured by first eligibility date by several months. The relationship between the two allowance series may vary across states. Because the relationship between the timing of outcome changes and timing of policy changes is very important for interpreting the findings,

[280] The tabulated application data used in the analysis reported in Chapter 4 are from these samples for the 1991 – 1997 period.

analyses based on eligibility status would likely be more informative than analyses based on paid status.

A second issue is the definition of "application." Many applications counted in the 10% SSR are "repeat" applications, usually because the first application was denied, but sometimes for administrative reasons. In 1993, about 30 percent of applications were repeat applications. Although many repeat applications represent new attempts to obtain benefits resulting from changes in circumstances or other factors, others are really continuations of previous applications. While some applicants who are denied at the initial determination level will appeal, another strategy to continue pursuit of benefits is to let the appeal period expire and file a new application. Those applicants who do the latter might be counted twice over a period of six months to a year, while those who do the former would only be counted once. This generates noise in the application series, which will make it all the more difficult to identify the impacts of the reforms. While dropping repeat applications from the analysis would be a mistake, it might be better to count only applications that are filed after a substantial period has elapsed since any previous application (e.g., one year).

The last two problems can be addressed using longitudinal data constructed from the SSR. SSA currently constructs a 1% Longitudinal SSR File every six months. This can be used to construct allowance and caseload series based on the eligibility concept, and can also be used to produce application estimates that include only those repeat applications that meet specified conditions. Regrettably, the 1% samples are not large enough to produce state-level DID estimates for many states, or to produce national estimates for immigrants by immigrant cohort.

SSA might find it useful to pursue a strategy that:

- Uses the monthly 10% SSR to follow outcomes for the various target and comparison groups for a few years,
- Builds a special purpose longitudinal SSR file for the purposes of a later evaluation, if the analysis of the 10% SSR indicates that further evaluation would be worthwhile.

SSA already has developed the methodology and software to produce longitudinal records from the SSR for any identified individual. The first step in building the special purpose file would be to identify a large set of potential target and comparison group cases from the full SSR or other administrative data files – enough in each state to produce sufficiently reliable state estimates of the desired statistics. The next step would be to create the longitudinal records for the selected cases.

2. DID Estimators for the Impacts of TANF

Estimators Based on AFDC/TANF Receipt at Time of Application (Adults and Children)

The potentially most useful DID analysis of outcomes to be performed with SSA administrative data alone would distinguish between outcomes for those applicants who are in AFDC/TANF families at the time they apply from those who are not. This analysis can be applied to child

cases as well as adults, and can produce estimates for all of the program outcomes of interest, including collateral estimates for DI outcomes.

A flag on the SSR for "cash assistance based on need" in the month in which the applicant applied for SSI indicates whether the applicant is in an AFDC or TANF family at that time. It is our understanding that the flag, which is called IUETYP in the SSR, is supposed to be coded as "F" in such cases.[281]

This information is ascertained by a SSA Claims Representative (CR) when the SSI application is taken at a field office.[282] The information may be more reliable for allowances than for applications because it is material to the initial SSI payment.[283] It is also possible that some applicants identified as receiving AFDC income were, in fact, receiving general assistance.[284] We have learned through our site visits that at least some field offices try to verify the information with local welfare agencies. This practice may not be uniform and may depend on the cooperation of the local welfare agency. Thus, validity of the information may vary by locality or state, and actual analysis of the data may show that it is not sufficiently reliable to be used for the evaluation's purposes in some states.

We understand that SSA has used this variable to produce national estimates of the percent of current SSI beneficiaries who are former AFDC recipients. SSA estimates that over 1.4 million of 6.5 million SSI recipients in January 1998 had received AFDC income at the time of application.[285]

The analysis could follow the DID methodology described earlier in this section in a straightforward manner:

- Computation of sex-specific DID estimates for narrowly defined age groups in each state, starting in a specified period. For adults, the evaluator should control for addictive disorders. For children, the evaluator should control for PDC/RBC groups likely to be affected by the SSI child reforms;

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[281] This discussion is based on information provided to us by SSA Field Office staff during site visits and Mary Barbour of ORES.

[282] The question is asked at the first interview, when the CR usually completes the "short-form" version of the SSI application, SSA-8001-F5 (7-90) (Question 18), but some times completes the "long-form," SSA-8000-BK (5-90, especially if an allowance appears likely. The long form must be completed for allowed cases. The question on the short-form is somewhat ambiguous about identifying AFDC/TANF income. It tells the applicant to "List all income received or expected to e received since the first moment of the filing date month. List cash, checks, and direct payments to bank accounts you (your spouse/parents) received or expect to receive. Include income from wages, ..., assistance based on need, ..." The applicant is required to enumerate income by source. The long form asks (Question 31a) "Since the first moment of the filing date month, have you received or do you expect to receive income in the next 14 months from any of the following? A list of income types is provided, including "Aid to Families with Dependent Children" as a line item.

[283] It may also be that the information for allowed cases is more likely to be based on the long-form question, which is more explicit about AFDC/TANF income.

[284] This would most likely occur if income identification is based on the short form because the short-form question does not explicitly distinguish between AFDC/TANF income and other cash assistance based on need.

[285] We are indebted to Charles Scott for providing this information. The estimate appears in an appendix to the *SSI Annual Report* (see SSA, 1998).

- Aggregation to the state level for comparison of the DID series to the timing of policy changes and other events. Separate child, adult female, and adult male series would be warranted. Examination of series for "young" and "older" adults, perhaps split at age 45, is also warranted, to verify that the estimated effects are more substantial for young adults; and

- Aggregation across states to obtain national series.

There are two important limitations of this analysis. One is the previously mentioned possibility that the data are of poor quality, at least in some states. Another is that this method will classify individuals who have received AFDC/TANF, but who left before applying, as comparison cases. If some TANF recipients apply only after they lose benefits because of sanctions or expiration of the lifetime limit, they will be classified as comparison cases. Further, some applicants who in the past might have obtained AFDC before applying for SSI might be deterred from applying for TANF under the new policy, again resulting in classification in the comparison group. Thus, there is some danger that this method could lead to an underestimate of the impact of TANF on applications and allowances.

Whether or not this is a major problem can be ascertained through complementary analyses. One is an analysis that uses state administrative data linked to SSA records, which we return to later in the chapter. The second is DID analysis of SSI allowances for adults using target-comparison group pairs that are based on parenthood status at the time of application. For children, DID analysis based on parent characteristics can serve this purpose. We consider these alternatives next.

Estimators Based on Parenthood Status (Adults)

When an SSI allowance is made, an SSA Claims Representative obtains information about relatives in the family. This information is not available for denied applicants, so it can only be used to produce estimates of impacts on SSI allowances, caseloads and benefits.[286]

The evaluator might use this information to classify adult applicants into three "parenthood status" groups: (1) married parent of a child under 18 who is living with the applicant ("married parent"); (2) unmarried parent of child under 18 who is living with the applicant ("unmarried parent"); and (3) no children under 18 living with the applicant ("non-parent").[287]

This information is not, regrettably, added to the individual's SSR, and we have not yet been able to identify a centralized source for such data. We have, however, verified with two field offices that the data are collected because they are material to benefit payments, due to deeming

[286] Impacts on DI allowances, caseloads and benefits for SSI applicants can also be estimated. DI allowances will include allowances for any SSI applicants who are denied SSI payments because they failed the means test.

[287] Question 15 of the long form asks for the name, relationship, sex, date of birth, and disability status of everyone with whom the applicant lives. It also asks if anyone living with the applicant who is not married and under age 18 or between ages 18 and 21, not married, and a student receives any income, and, if so, the source, type, and monthly amount of the income.

of income for the support of family members.[288] Presuming the data are accessible, SSA would need to create an extract, and merge it to an SSR extract via SSN.

The evaluator could conduct two DID analyses with the three parenthood status groups: unmarried parents vs. non-parents, and married parents vs. non-parents.[289] Because most parents in AFDC/TANF families are unmarried, the impacts of TANF on allowances to unmarried parents are likely to be greater than on those to married parents. Thus, we would expect to find larger effects for the first comparison than for the second.

As with the DID analysis based on TANF status at application, this analysis should be performed by sex and narrow age category at the state level, with aggregation of findings to broader age categories and the national level as required.

Sub-analysis could consider the age of a parent's youngest child, and whether any child is a SSI participant.[290] Other things constant, effects of TANF on SSI allowances are likely to be smaller for parents of very young children (those with children under two are exempt from work requirements by federal law), and for parents whose youngest child is nearing age 18. Effects on allowances for parents of children who receive SSI might be larger or smaller than for other parents. Some of these parents will be exempt from work requirements, which would reduce the incentive to apply. This might vary substantially by state. The opposite result may be found, however, because adult disability may be positively correlated with child disability among families targeted by TANF, and because parents of SSI recipients will likely be more familiar with the SSI program, application process, and resources available to help in obtaining benefits. The sub-analysis could use a base parent group (e.g., married parents with youngest child between the age of 6 and 12 and not participating in SSI) as the comparison group for the purpose of testing hypothesis concerning the relative impacts on the various parent groups.

Estimators Based on Parent Characteristics (Children)

For children, there is substantial information about parents in the administrative records to distinguish among those most and least likely to be in AFDC/TANF target families. The two most useful pieces of information are likely to be whether the child lives with both parents ("parental status"), and parent Social Security earnings in the period just prior to application.[291] For allowances, caseloads and benefits, a four-way classification scheme might be worthwhile --

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[288] Although SSI does not provide support for dependents, it does deem a limited amount of other family income as necessary for the support of other family members, so that it is not reduce the SSI payment amount.

[289] We have not divided the non-parent comparison group into married and unmarried non-parent groups on the assumption that sample sizes in the married non-parent group would be small.

[290] As discussed in a previous footnote, the ages of all relatives the applicant lives with are obtained upon allowance.

[291] The parent(s) of an SSI child applicant or recipient can be identified on the SSR by flagging all records in the SSR that have the same Housed Under Number (HUN) as the child applicant/recipient and then pulling those records where the Master File Type (MFT) is equal to XM (ineligible mother) or XF (ineligible father). For childhood disability cases, the HUN for the child and ineligible parent(s) is equal to the child's SSN. Parents include stepparents and adoptive parents. Earnings data would need to be obtained from the Master Earnings File. It is important to use earnings prior to application for classification purposes because the onset of child disability may reduce parental earnings. The evaluator could, instead, use family income deemed available for the child for classification purposes. Deemed income is available on the SSR, although just for allowed cases. Hence, estimates of TANF impacts on applications would need to be based on parental status only.

by parental status crossed with a categorical variable for "high" or "low" Social Security earnings as a percent of poverty income (e.g., above or below 150 percent of poverty) -- assuming that sample sizes will support the analysis.[292] Those with positive deemed incomes would be the comparison group for those with no deemed incomes within each parental status class.

3. DID Estimators for the Combined Impacts of TANF and DA&A Reforms

To produce estimates of the combined impacts of TANF and DA&A reforms on program outcomes for adults, the evaluator will need a target group whose members are potentially affected by either one, or both, of the reforms, and a comparison group whose members are affected by neither. As discussed above, the addiction disorder indicator can be used to identify allowances most likely affected by the DA&A reforms. Thus, the evaluator could identify the target group allowances as those who were receiving AFDC/TANF payments at the time of application and/or were determined to have an addiction disorder.[293] All other cases would be in the comparison group. Alternatively, if feasible, the evaluator could include those who are parents and/or those with addiction disorders in the target group, and all others in the comparison group.

It would be useful to produce DID estimates for subgroups within the target group: those affected by TANF only, those affected by DA&A reforms only, and those affected by both. Three subgroup analyses will be of interest:

- Comparison of outcome changes for those affected by both reforms to changes for those affected by TANF only will provide an indication of the extent to which the DA&A reforms dampened the impact of TANF.

- Comparison of outcome changes for those affected by the DA&A reforms only to changes for those affected by both reforms will provide an indication of the extent to which the TANF reforms dampened the impact of the DA&A reforms.

- Comparison of outcome changes for those affected by the DA&A reforms only to those not affected by either reform will provide and estimate of the impact of the DA&A reforms on allowances to those not affected by TANF.

[292] We assume that the vast majority of child applicants from AFDC/TANF families would have no deemed income. This assumption could be assessed by analysis of the deemed incomes for those identified as receiving AFDC/TANF income at the time of application.

[293] For young adults, the evaluator might add any cases likely to have been formerly in the target group for the SSI child reforms.

4. DID Estimators for the Combined Impacts of TANF and SSI Child Reforms

The approach developed here parallels the approach developed for the analysis of the combined impacts of the TANF and DA&A reforms on program outcomes for adults. To produce estimates of the combined impacts of TANF and SSI child reforms on SSI outcomes for children, the evaluator will need a target group whose members are potentially affected by either one, or both, of the reforms, and a comparison group whose members are affected by neither. The evaluation could use the previously discussed scheme, developed by RAND (1998), to identify allowances to children in the groups most likely affected by the child reforms. Thus, the evaluator could identify the target group allowances as those who were receiving AFDC/TANF payments at the time of application and/or those most likely to be affected by the child reforms. All other cases would be in the comparison group. Alternatively, if feasible, the evaluator could use parent status rather than AFDC/TANF payment status at application.

It would be useful to produce DID estimates for subgroups within the target group: those affected by TANF only, those affected by the child reforms only, and those affected by both. Three subgroup analyses will be of interest:

- Comparison of outcome changes for those affected by both reforms to changes for those affected by TANF only will provide an indication of the extent to which the SSI child reforms dampened the impact of TANF.

- Comparison of outcome changes for those affected by the SSI child reforms only to changes for those affected by both reforms will provide an indication of the extent to which the TANF reforms dampened the impact of the SSI child reforms.

- Comparison of outcome changes for those affected by the SSI child reforms only to those not affected by either reform will provide and estimate of the impact of the SSI child reforms on allowances to those not affected by TANF.

5. Analysis of Non-Citizen Reforms

PRWORA provisions would have ended SSI eligibility for non-citizens, with some exceptions, as of August 1997. The Balanced Budget Act restored eligibility for all legal aliens, provided they meet other program criteria, with one major exception. Most individuals who become legal immigrants after August 22, 1996 will not be eligible for SSI even if they otherwise qualify until they have accumulated at least 40 qualifying quarters of work.[294] Because all of these provisions apply to those who would otherwise qualify on the basis of either age or disability, the impact evaluation should consider adults of all ages. There may also have been an impact on children,

[294] There are many special categories of immigrants for which there are special exceptions. See "Impact of Welfare Reform Changes on Qualified Aliens," *Social Security Talking Points*, September 1997.

but in 1995 there were only about seven thousand child SSI recipients who were classified as non-citizens.[295]

While the PRWORA provisions that were reversed in the BBA were never implemented, there may well have been a short-term impact on applications from, and allowances to, non-citizens. There was also likely a substantial impact on naturalizations, so any declines in non-citizen applications could be due, in part, to the increase in naturalizations. It is also possible that some non-citizen recipients were induced to leave the rolls, in anticipation of losing benefits, or due to misunderstanding about their eligibility. Further, even post-BBA there may be fewer applications from pre-PRWORA immigrants because of misunderstandings about eligibility, or perhaps loss of immigrant trust in SSI.

The SSR identifies applicants who are immigrants and provides information about their immigrant status (including whether they have become naturalized citizens), date of immigration, and country of origin. This immigration status field was updated following the 1996 reforms reflect naturalizations that would have been material to continuing eligibility had the initial reform not been changed.[296] It appears that we cannot distinguish between those who became naturalized citizens before application and those whose status was changed to "naturalized" after the reforms.[297]

Because date of immigration is material to eligibility under the BBA, an evaluation would need to follow immigrant applications and allowances by date of immigration to detect any effect beyond effects experienced in the period between PRWORA and the BBA. A complicating factor in the analysis is that immigration flows have varied substantially in recent years, especially due to the large numbers who received legal immigrant status under the Immigration Reform and Control Act of 1986 (IRCA), from 1988 through 1994. Data available from the Immigration and Naturalization Service (INS) can be used to control for immigration by fiscal year. Compiled data for each year include legal immigration by age (under 15, 15 – 29, 30 – 44, 45 – 64, and 65+) and sex, and by country of origin. Individual data can be obtained on data tapes, from as early as 1972.[298] The latest year for which data are now available is 1996. Tabulated data are available form 1992 forward on the INS website, and have been published in the *Immigration Yearbook* since 1984.

While much could be done with the immigration data, it would be worthwhile to perform some fairly simple analyses first. We recommend constructing cumulative adult applications and allowances per capita for recent immigrant cohorts by years since immigration. We believe this

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[295] Picket and Scott (1996, Table C). The corresponding figures for disabled adults is 543,600 and for aged adults is 236,600.

[296] The Alien-Refugee Indicator (ALIEN) on the SSR categorizes provides codes that can be used to classify all applicants as U.S. born citizens, naturalized citizens, and non-citizen immigrants in a variety of categories. The naturalized citizen category includes children of citizens who were born outside of the country, but presumably this is a small share of all naturalized citizens. ALIEN-RD provides the date of immigration, and ALIEN-CNTRY provides the country of origin.

[297] We are continuing to check on this. This information would allow the evaluator to estimate the impact of the reforms on citizenship among those who were already SSI recipients.

[298] The information on data availability was provided by Eloise Thornton of the INS Statistics Division.

could be done through the use of data from a single 10% SSR File from a post-reform year.[299] Based on an analysis of 1995 applications in the 1% SSR Longitudinal File, the 10% File should contain records for about 5,000 non-citizen applicants in the aged category in 1995, and 11,800 in the blind or disabled adult category, but only about 300 in the blind and disabled child category.[300] We expect the number of cases from each recent immigrant cohort to be substantial because of the rapid growth in non-citizen recipients that led up to the reform legislation. This is verified by an analysis of the December 1992 10% SSR File that showed that 16.5 percent of immigrant SSI recipients at that time had applied for SSI within 12 months of immigration, and 53.5 percent had applied within five years (***Scott, 1993***). Hence, we expect a majority of the applicants from each recent year to have entered within the last five years. If half of the immigrant applicants in 1995 entered within the last five years, then the 10% SSR would include an average of over 1,000 adult blind or disabled applicants and about 500 aged applicants from each of the previous five annual immigrant cohorts.

Application and allowance counts for each cell would be obtained from the SSR, and the denominator for each cell would be obtained from INS data. A table shell for the total results appears in **Exhibit 6.4**, which could be replicated for age-sex and country of origin subgroups. This would establish per-capita cumulative application and allowance schedules by cohort for the pre-reform cohorts. We would expect a downward shift in the cumulative application and allowance schedule for the 1996 cohort, and near elimination of applications and allowances for many years to the 1997 cohort. The application and allowance experience of earlier cohorts can also be used to project future effects on SSI outcomes under the assumption that all those who immigrate after August 22, 1996 remain ineligible for at least nine years. We might also see a flattening of the schedule for earlier cohorts in 1996 and 1997, possibly followed by a return to growth in 1998.[301]

It would be problematic to disentangle the effects of the non-citizen policy changes from the other reforms, because it is difficult to define comparison groups for immigrant applicants. The main reason is a factor that affects applications from immigrants but not native-born citizens: the flow of immigrants into the country. The evaluator could use INS and Census information on immigrant and non-immigrant populations to construct series for applications per capita for both groups, but this is at best a partial solution because date of immigration is key to the impacts. We do not have a recommendation for a comparison group. Given the limited nature of the non-citizen reforms under the BBA, more effort to address this issues does not seem warranted.

The post-PRWORA program status of immigrants who were SSI recipients just prior to the passage of PRWORA is also of interest. As a simple first step in assessing whether PRWORA resulted in a temporary or permanent reduction in participation by this group, the evaluator could tabulate monthly eligibility for SSI recipients who were eligible for benefits in December 1995,

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[299] Scott (1993) used the 10% SSR for December 1992 to produce tables for months from immigration to SSI application for SSI recipients who were on the rolls in that month.

[300] Pickett and Scott (1996, Tables J, K, and L).

[301] If citizenship status at time of application can be distinguished from citizenship status after passage of PRWORA, a second set of exhibits could be develop to evaluate the impact of PRWORA on naturalizations among SSI applicants and recipients. Because there is a minimum five-year waiting period before naturalization, this analysis would only consider cohorts entering at least five years before the end of the analysis period.

from December 1995 forward, for three groups: immigrants who were not naturalized citizens at application, immigrants who were naturalized at application, and native-born citizens. The two comparison groups could be selected to match the target group on several important characteristics, such as age, sex, year of first allowance, state of residence and impairment.

Interaction between non-citizen reforms and TANF or other SSA reforms is probably not worth assessing because of the relatively few immigrants who are affected by the change to the current policy. Statistics on the caseload for the DA&A reforms also show that interactions between the DA&A reforms and the non-citizen reforms must be small.[302]

[302] Of the 167 thousand SSI recipients who were designated as DA&A in March 1996 (the month before elimination of allowances to applicants whose DA&A is material to their disability) only 1.0 percent were known to be non-citizens. Of these, 40 percent were still (medically) eligible as of December 1997. See Lewin (1998a).

Exhibit 6.4
Percent of Immigrants Applying for SSI and Receiving Allowances, by Year of Immigration and Years Since Immigration*

Years After Date of Legal Immigration	Year of Legal Immigration							
	1990	1991	1992	1993	1994	1995	1996	1997
Percent Applying								
Less than 1 year							■	
Less than 2 years						■		
Less than 3 years					■			
Less than 4 years				■				
Less than 5 years			■					
Less than 6 years		■						
Less than 7 years	■							
Less than 8 years								
Less than 9 years								
Percent Receiving an Allowance								
Less than 1 year							■	
Less than 2 years						■		
Less than 3 years					■			
Less than 4 years				■				
Less than 5 years			■					
Less than 6 years		■						
Less than 7 years	■							
Less than 8 years								
Less than 9 years								

*Shaded cells correspond to 1996.

C. Pooled Time-Series Analysis of DID Estimates

1. Objectives

One significant limitation of the DID analysis described above is the assumption that "other factors" affect target and comparison group outcomes proportionately (e.g., a percentage point increase in the unemployment rate increases applications from both groups by the same percent). This assumption may be wrong. Pooled time-series analysis (PTS analysis) could be used to adjust state-level DID estimates for changes in other factors that can be observed at the state level. PTS analysis can also be used to assess the relationships between specific state policy changes and the DID estimates.

As mentioned previously, PTS analysis of applications and allowances alone would likely produce unsatisfactory information about the impact of TANF, because it is too difficult to adequately model the effects of the various state-level factors, including the policy changes. The

analysis proposed here would use state-level DID estimates as the first-cut estimate of the impacts of the TANF reforms, as well as of the combined reforms, and use PTS analysis to better understand variation in the estimates across states and over time.

Some of the DID estimators described above can be used for applications, but others cannot. The discussion below refers to allowances, but the approach can equally be applied to applications when DID application estimates are available. The approach could also be applied to caseload and benefit estimates, but findings are likely to be stronger for the allowances.

PTS analysis adds substantially to the data requirements for the DID analysis alone. It will require construction of historical DID series for a number of years before the reforms of interest. It would also be preferable to use quarterly, rather than annual series. It will be necessary to collect state-level explanatory variable data – building on the data that we have collected for this project through 1996.

2. Technical Specification

Dependent Variables

The analysis would use state-level DID estimates as dependent variables in pooled time-series models. The historical series would be constructed just like the post-reform series, using the last pre-reform period as the base. For allowances, the series will be the change in allowances from the base period to each specified period that is not explained, in a proximate sense, by concurrent changes in comparison group allowances. The value for the base period will be zero by definition. We suggest adding base period target group allowances in each state to the every value in a state's series. The resulting "normalized" series for each state will estimate target group allowances in each year after holding constant all factors controlled for by the DID analysis at base year values. The one-period change in the logarithm of the normalized series might then be used as the dependent variable in the analysis.

The aggregate DID series for each state will control for the effects of population growth and aging, as well as other factors, on target group allowances. Nonetheless, it would be useful to estimate separate PTS models for young women, young men, older women and older men, because the influence of other factors on the DID series will likely vary by age and sex. A single child model might be sufficient, but analysis by broad age group and/or sex might be warranted. The DID estimates for narrower age groups should be reviewed to determine reasonable age breaks.

Explanatory Variables

We distinguish between two types of variables: control variables, to capture factors of no direct interest to the evaluation that may have different impacts on target and comparison group allowances; and program parameters, which capture state-level policy changes of interest to the evaluation. For the former, we are more concerned about controlling for the other factors than we

are about using a parsimonious specification with easily interpreted coefficients. We recommend including control variables from each of the following groups:[303]

- *Labor market* – we suggest continuing to experiment with the three measures used in the previous chapter: the unemployment rate, trade employment per capita, and the labor force participation rate.

- *General assistance* – we suggest using dummy variables to "dummy out" three years of data for a state when the state makes a major change to its GA program.[304] An alternative approach we have used in the past is to include an crude estimate of the impact of the GA policy change on per capita changes in the GA caseload.[305]

- *Other* – while we have attempted to use a wide variety of other control variables in our past modeling efforts for DI, SSI and AFDC, none have consistently proven to have explanatory power (see ***Lewin, 1998b)***. Perhaps the most promising of the others are those that have served as crude proxies for single-parent families -- vital statistics on marriage, divorce and out-of-wedlock births. While it is clear that changes in family structure are an important determinant of AFDC/TANF caseloads, and there is some evidence that they affect SSI caseloads as well (***Lewin, 1995a and b***), state-level measures of these variables are poor except in Census years. Similarly, state poverty rates would likely have explanatory power were it not for the fact that they are estimated from survey data. We have also attempted to use a variety of Medicaid program provisions in past modeling efforts, but have not obtained significant results. Medicaid expansions for women and children seem especially relevant, and have been shown to be significant in analysis of survey data on AFDC participation, but our efforts to use measures of these expansions in PTS analysis of AFDC caseload data did not yield statistically significant results. In the AFDC models we have also tried variables to capture possible implementation of laws concerning child support enforcement, paternity establishment, and abortion, but have obtained no significant effects.

There are two sets of AFDC/TANF program parameters to consider. One set consists of three parameters that we have used in the past to characterize the budget constraint for an AFDC family of three (***Lewin, 1997***): the maximum monthly benefit for a family of three, the average tax and benefit reduction rate, and a measure related to the program's gross income limit.[306] There was, unfortunately, a temporary interruption in the collection of the data used to construct these variables in 1997.[307] As documented in ***Appendix Exhibit D.19***, we have also constructed a

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[303] Details of the relevant series that we have constructed for this and earlier efforts appear in Appendix Exhibit D.19.

[304] We applied this approach in the previous chapter, to four years, but did not find substantial findings after the first three.

[305] This variable was used in the hazard analysis reported in the previous chapter, and is documented in ***Appendix Exhibit D.19.***

[306] We have already developed these measures through 1996, taking into account the interactions of AFDC, Food Stamps, and the Earned Income Tax Credit.

[307] The Congressional Research Service (CRS) has historically produced semi-annual reports summarizing the AFDC financial eligibility and benefit computation rules used by each state. However in 1997, the CRS did not survey states about these rules, because most states were in the process of implementing new eligibility and benefit rules as part of their TANF programs. Consequently, only limited information is readily available about

series of dummy variables to represent miscellaneous AFDC provisions that states have implemented in the recent past, including certain work requirements and limits to payments for children born while the mother is an AFDC recipient.

The second set of program parameters represents the state's implementation of TANF features. Developing such a set will be a major challenge, but is facilitated by the considerable efforts under way to document TANF reforms.[308] A simple scheme would be to develop dummy variables for implementation of work requirements and the five-year lifetime limit. It would also be valuable to represent the severity of sanctions. We found, for instance, that some states are planning to limit sanctions to elimination of benefits for the family's adults. Dummy variables to represent exemptions for people with disabilities from work requirements and the five-year limit might also be constructed. A recently completed study documents current state exemptions for TANF recipients with disabilities (Urban Institute, 1998). Changes to these features are likely to occur in some states in the future, but we do not know if such changes will be documented. SSA might find it advantageous to support efforts to do so. Information on new efforts to divert TANF recipients into SSI could also be documented in this way. In addition to these variables, it will likely be necessary to include dummy variables for miscellaneous reforms implemented in a very small number of states.

We are somewhat pessimistic about identifying the impacts of specific TANF reforms through the inclusion of these program parameters. This stems in part from the fact that we did not find demonstrable effects of changes in AFDC program parameters on SSI applications in our own PTS analysis of annual pooled applications for 1988 to 1996.[309] It may be, however, that the effects were obscured because variation in these variables was limited during the period and because major, imperfectly measured, changes in other factors (e.g., policy changes) dominated changes in the application series over this period. We would expect the DID estimates to be much more sensitive to AFDC/TANF program parameters. Use of quarterly data might also substantially improve the ability to detect the effects of changes in these parameters.

An alternative to use of the program parameters that capture the reforms is to classify states into three to five groups, based on a careful qualitative assessment of the reforms and their likely impact on SSI recipients. For instance, the group of "high impact" states might include those that: don't exempt TANF recipients with disabilities from work requirements and time limits; have shorter time limits than required by PRWORA; sanction the entire TANF unit, not just the parent(s), for non-compliance; and have diversion programs that require and actively support application to SSI for those with disabilities. Low impact states might be those that have none of these features, and all other states might be classified in one to three intermediate groups. This approach recognizes that it will be very difficult to disentangle the effects of specific reforms, but might be the best approach to identifying the joint effects of all reforms.

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the financial eligibility and benefit computation rules used by states in 1997. The CRS resumed its survey of states in 1998, producing two reports, one in June and the second in October, on the eligibility and benefit rules used under state TANF programs.

[308] See Section VII for further discussion.

[309] The models we report in the previous chapter do not include these parameters, but this is because we found no credible evidence of effects in some initial models. The reported models do include dummy variables for a few particularly notable AFDC waivers, but again we found very little evidence of an impact.

The PTS analysis will implicitly include state fixed effects because the DID estimates are changes from the base period to the current period within each state.[310] That is, it would rely on cross-state co-variation between changes in explanatory variables and the percent changes in target group allowances that are captured in the DID series.

3. Interpretation

Once estimated, the models could be used to produce:

- Adjusted estimates of the impacts of TANF on child and adult allowances, nationally and for each state;
- Adjusted estimates of the impacts of TANF and DA&A reforms on adult allowances, nationally and for each state; and
- Adjusted estimates of the impacts of TANF and SSI child reforms on child allowances, nationally and for each state.

Adjusted state estimates would be obtained by using the control variables and their coefficients to remove the variation in each DID series that is explained by the control variables. Any estimated effects of the program parameter variables would be retained in the adjusted estimates. The state estimates could be added to obtain national estimates.

The coefficients of the program parameter variables would provide some evidence of how the various features of TANF reforms affect SSI allowances. We would expect the provisions represented in these parameters to capture only a fraction of the effects of TANF, because it is simply not possible to fully capture the richness of cross-state variation in TANF programs, and in their target populations, that is relevant to the impacts of TANF on SSI outcomes. Nonetheless, the analysis may show that certain TANF features are particularly important in determining SSI outcomes.

IV. ANALYSIS OF MATCHED CENSUS/SSA DATA

A. Overview

SSA has linked data from the 1984, 1990, 1991, 1992 and 1993 Surveys of Income and Program Participation (SIPP) and the 1991 and 1994 Current Population Surveys (CPS) to SSA administrative data.[311] Future matches of both surveys are anticipated. This option would use these data to:

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[310] The DID estimates are changes even before we convert to changes in the logarithms of normalized series (from the base period to the current period). The latter transformation converts everything to approximate annual percentage changes, making the series comparable across states of all sizes.

[311] Section F-1 of the RFTOP specifies that the SIPP files have been linked to the Supplemental Security Record (SSR), the Master Beneficiary Record (MBR), and the Summary Earnings Record (SER) and that the CPS files have been linked only to the MBR and SER. We assume, however, that survey files already linked to any of

- Estimate the impact of TANF reforms on SSI applications, allowances, caseloads and benefits, given the SSA reforms, at the national level during the observed post-period. Estimates of impacts on DI outcomes for SSI applicants would also be produced (Section B); and

- Estimate the combined impacts of all reforms on SSI caseloads and benefits in the post-period (Section C).

We used the 1990 – 1993 matched SIPP/SSA files to estimate the hazard models for SSI applications and allowances that are presented in the previous chapter. This analysis can be extended to study the impact of TANF on SSI outcomes. There is, however, an important *caveat*. It will be problematic to attribute estimated shifts in SSI applications from, and allowances to, those in the target population for TANF to TANF reforms themselves. As seen earlier, such shifts occurred before TANF. There are several explanations for these pre-TANF shifts, but our ability to discriminate among them is very limited. Future analysis is likely to encounter similar ambiguities.

Nonetheless, it would be useful for policymakers and planners to know when shifts from TANF to SSI are occurring, how large the shifts are, and the potential implications of the shifts for caseloads and costs. The estimates produced would also complement and validate the national estimates produced using the administrative data alone. A main advantage over the administrative data is the availability of extensive information on the characteristics of SIPP respondents, including family characteristics and past participation in AFDC – information that can be used to better define target and comparison groups.

The second part of this option addresses the need to evaluate the impacts of all reforms. We present a method that could use either the SIPP/SSA or CPS/SSA matched data. The approach would predict counterfactual caseloads in the post-period, using cross-sectional models estimated in the pre-period, and compare the size and characteristics of the actual and counterfactual caseloads. Actual and counterfactual benefits would also be compared. Again it will be problematic to attribute differences in the actual and counterfactual outcomes to the combined effects of the policy changes, exclusively. Differences in the characteristics of those in the actual and counterfactual caseloads should provide substantial information about how important the policy changes were. Cross-state analyses of differences between the actual and counterfactual caseloads may also be useful for this purpose.

B. The Impacts of TANF

1. Objectives

The primary objective of this analysis is to estimate the impact of TANF reforms on applications and allowances from 1996 through the end of the observation period, using multivariable

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these records can potentially be linked to any other SSA administrative file. If this is incorrect, then what might be done with CPS data is more limited than we suggest in the text. The CPS data for 1991 and 1994 have been previously analyzed by Weaver (1997).

econometric models applied to the matched SIPP/SSA data. The estimates are likely to be confounded by the effects of other unknown factors that may shift participation from TANF to SSI during this period (or vice versa), but the methodology is expected to produce reasonably accurate estimates of changes in transitions from TANF to SSI for all reasons during the post-period.

A secondary purpose is to estimate the effects on SSI caseloads, SSI payments, DI beneficiaries, and DI benefits through the end of the observation period. This would be accomplished by estimating a series of auxiliary equations for allowed cases and using them to predict these outcomes for simulated counterfactual SSI allowances.

2. Data

The eonometric analysis would use pooled SIPP/SSA data. We recommend adding the 1996 SIPP panel to the 1990 – 1993 panels used in our analysis. The 1996 panel is the last panel to have its initial interview before PRWORA. The next scheduled SIPP panel will begin in 2000, and waiting for it would be of limited value because a considerable number of individuals who were at-risk for first SSI applications or allowances before PRWORA might have already become SSI applicants and recipients.[312]

In what follows, we assume that the 1990 – 1993 panels and the 1996 panel are available, and that SSI application and allowance data are available through the end of 2001.[313] By that date, five-year lifetime limits are likely to have been reached for a substantial number of TANF recipients. An earlier evaluation would be limited in its ability to capture the effects of lifetime limits, but may nonetheless find significant impacts because of work requirements, diversion efforts, and other TANF changes.

The sample for the analysis of the adults would be limited to SIPP respondents who: are at least 18 at the time they are first observed in the survey data; have low incomes; and are at-risk for SSI application or receipt. In our earlier analysis we used family income of 400 percent of the poverty standard as the income maximum, based on analysis of pre-application family incomes among recent SSI applicants. We used 40 as an upper age limit, in part because a large majority of adult AFDC recipients are under 40, but also because we wanted to be sure we had manageable sample sizes for the analysis. Our experience suggests that increasing the upper age limit to 50 would be feasible. It would also capture many more transitions to SSI, including transitions among parents who are over 40 when they are first observed. We recommend estimating separate models for women and men. Child samples would include those who are under 18 and still at-risk for SSI.

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[312] The evaluator could also add the 1984 panel, but this may be problematic because of changes in SIPP data collection that occurred between 1984 and 1990. A possibly important advantage of adding the 1984 SIPP is that it would allow estimation of long-term duration effects in the period prior to the recent reforms, but interim SSA and non-SSA reforms may mitigate the value of that information.

[313] Availability of allowance data lags availability of application data due to the several months it usually takes to process applications (much longer in a few cases). Hence, complete allowance data are likely to be available for a shorter period than complete application data.

In defining "at-risk" for our application analysis, we excluded anyone who had previously applied, regardless of their current SSI status, because the matched data do not include information on later applications by individuals whose first application was denied or who had obtained benefits but left the program later. A large share of applications in each year come from applicant's who have applied previously.[314] It would be desirable to add information about later applications to the merged file, so that the analysis could be expanded to incorporate effects on repeat applications.[315]

For our allowance analysis, we defined the at-risk population symmetrically – those who had never received an allowance before – and analyzed only first allowances. We understand that information on repeat allowances is available in the matched data, so this could be changed. The at-risk population would then be those who are not eligible for an SSI payment when observed in SIPP, including those who have been eligible at some point in the past, and the analysis would examine all future allowances, including repeat allowances. Past receipt of SSI would likely be an important addition to the explanatory variables.

SIPP weights should be used in each of the analyses described below to ensure that sample estimates are unbiased for corresponding values in the population. Use of weights will have little impact on the key parameters of interest if the effects they represent are reasonably constant across observations, as the specification assumes. Even if the assumption is correct, however, it will be necessary to use weights in any simulations performed with the estimated models to ensure that simulation estimates are unbiased estimates for population values.

3. Econometric Model

We first present a model that is a modified version of the hazard (duration) model presented in Chapter 5. We then discuss the potential use of simplified, linear versions, of this model that are computationally less demanding and perhaps easier to interpret, but problematic in other respects.

Hazard (Duration) Model

The following is a modification of the discrete time logit model for SSI applications and allowances that was presented in the previous chapter:

Equation 6.1: $$ln[R_{id}/(1-R_{id})] = a_{dp} + b'X_i + d_t Pr(D_{it}^*|X_i)$$

where:

- $ln[.]$ is the natural log operator;

[314] In 1993, 0.7 million of the 2.3 million SSI applications filed (30 percent) were first applications (Pickett and Scott, 1996, p. 37).

[315] As mentioned previously, some repeat applications are "noise," reflecting administrative decisions or the passed appeal deadlines. The evaluator may want to only include the first repeat application after a specified period since the previous application (e.g., 12 months).

- R_{id} represents the conditional probability that individual *i* applies for SSI benefits, or receives an allowance, in period *d* after he or she is first observed in SIPP;

- α_{dp} is the "duration effect" at duration *d* for respondents to SIPP panel *p*. This set of parameters allows for a different shift in the hazard at each duration for each panel, and each parameter can be thought of as a panel and duration-specific intercept;

- X_i is a (column) vector of explanatory variables that do not vary with duration -- characteristics of the individual when first observed in SIPP;

- b is a vector of coefficients for the *X*s;

- D_{it}* is a an unobserved dummy variable indicating that the individual is in the target populations for both TANF and SSI at time t. $Pr(D_{it}^*|X_i)$ is the probability that the individual is in the target population conditioned on the information in X_i; and

- d_t is a year-specific coefficient for $Pr(D_{it}^*|X_i)$.

In thinking about this model, it is important to keep in mind that duration is being measured from the first point of observation in SIPP, and that the characteristics are based on that observation. Conditional on these characteristics, events such as changes in family status and onset of disability that occur at a later date are viewed as random.

There are two differences between this model and the model previously presented. The first is that we have allowed for different duration coefficients for each panel. We think this is important for the pre-reform period because the large increase in allowances during that period swept an increasing number of respondents out of the at-risk pool from 1990 to 1993. This probably accounts for significant coefficients for some of the panel dummies, especially for children. In our analysis, we imposed the assumption that panel effects do not depend on duration, but this may be incorrect. The specification presented here is more general. The more restrictive specification could be tested against this one, and adopted if the restrictions are not rejected.

It should be noted that the model has no year effects. Year effects would be of interest because they would show shifts in applications over time that cannot be explained by the variables in the models. In fact, however, year effects are imbedded in the duration-panel specific intercepts. The latter could be translated into an equivalent set of year-panel specific intercepts, because an observation's panel and duration uniquely determine the year of the observation. Thus, shifts in the intercepts associated with panel and duration may, in reality, reflect unidentified shifts associated with year. We cannot add a set of year intercepts to the specification because they would be exactly collinear with the duration-panel specific intercepts. If we impose restrictions on the specification, however, we can identify year effects. For instance, if we specify that duration effects are all zero and just include panel parameters, we could put in year dummies as well – symmetric to the specification we have presented, which implicitly assumes zero year effects. Alternatively, we could specify that the duration-panel specific intercepts are the sum of a panel parameter and a duration parameter, and then include additive year effects for all but a base year. This might be more reasonable, but year effects produced in this way would be

subject to the criticism that they rely on unverifiable restrictions to distinguish them from duration effects.

The second important difference between this model and our earlier model is inclusion of the term $d_t'Pr(D_{it}^*|X_i)$. This term allows for shifts in the hazard in proportion to the conditional probability that the individual is in the target populations for both AFDC/TANF and SSI at time *t*. This probability is unknown because disability is measured imperfectly in SIPP, and because change in family and disability status can occur between the survey date and t.

Suppose, for the moment, that $Pr(D_{it}^*|X_i)$ is observed. Then we could include it as a time-varying variable in the equation. The difference between the value of d_t for a post-reform year and the value for the last pre-reform year, which we assume to be 1995, would represent an estimate of the shift in the hazard for someone with a high probability of being in the target group. If TANF induces SSI applications or allowances, the effects would be captured through changes in the values of the d_t after 1995. If TANF reforms were the only reason for the post-1995 values to change, then the impact of the reforms could be evaluated by using the model to simulate counterfactual applications and allowances after setting each post-1995 δ_t value equal to the 1995 value. Results from the pre-reform period suggest, however, that other sources of temporal shifts in the hazard for those targeted by the reforms are likely to be confounded with the effects of TANF. Nonetheless, it would be useful to know how large any future shifts of this sort are because they represent changes in applications and allowances from the TANF target population, for whatever the cause.

While we do not observe the probability that a SIPP respondent is in both target groups in a specific year, we do observe the conditioning variables, X_i. If we could somehow map these into probability estimates, we could substitute the probability estimates for the probability term in the equation.

One simple way to do this is to specify that $Pr(D_{it}^*|X_i)$ is a linear function of a subset of the variables in X_i, say Z_i:[316]

Equation 6.2: $$Pr(D_{it}^*|X_i) = g_t'Z_i.$$

Substitute this expression into the right-hand side of the main equation to obtain:

Equation 6.3: $$ln[R_{id}/(1-R_{id})] = a_{dp} + b'X_i + d_t g_t'Z_i = a_{dp} + b'X_i + g_t^{*\prime}Z_i$$

where $g_t^* = d_t g_t$. This suggests that we simply replace the probability term in the original equation with a term that has time-varying coefficients on a subset of the *X*s. The models reported in Chapter 5 in which we included a family dummy interacted with year dummies are a special case of this specification, with just one *Z* variable. It would be necessary to set g_t^* equal to zero in some "base" year to avoid exact collinearity with the *X*s. The obvious base year would be the last full pre-reform year, 1995. With this normalization, the g_t^* for years after 1995 would

[316] Duration since the SIPP observation also seems likely to have an impact on the probability of being the target populations for both programs. If we were to include duration shifters in this specification, however, they would be indistinguishable from the panel and duration specific intercepts in the model.

represent shifts in the hazard for target group cases relative to other cases after 1995. For the counterfactual of "no shifts," we would simply drop the post-1995 terms from the estimated equation.

The *X*s for this analysis could be selected from the individual characteristics used in the preliminary analysis. In principle, many of the variables in *X* could be included in *Z*, but the small number of SSI transitions observed in each year make this impractical. It might be worthwhile to experiment with adding a second variable to the family. The leading candidate for an additional variable is a dummy variable for any disability or health condition interacted with the family dummy.

An attractive alternative is to first estimate a probability model for being a member of a targeted family (i.e., having children) *and* having a disability in the year in which the respondent is observed, then using the predicted value from the equation to estimate $Pr(D_{it}^*|X_i)$ up to an unobserved factor of proportionality; the latter can be implicitly incorporated in δ_t. This would be very similar to the model we estimated with terms for interactions between the estimated probability of AFDC participation and year. The assumption would be that the conditional probability in year *t* is proportional to the probability in the base year.

There are many ways that "having a disability" could be defined for purposes of identifying adults with disabilities who are in families. Because the prevalence of "severe disability," using our SIPP-based definition, is high among adult SSI recipients (70 to 80 percent, depending on demographic group), this would be a reasonable definition to use for adults. Child disability is poorly measured in SIPP, and the only practical definition for this purpose may be "any disability" for child cases.[317]

"Targeted families" (i.e., families targeted by TANF reforms) could also be defined in many ways. They should include AFDC families, but other low-income families (e.g., below 200 percent of poverty and mother-only families) should also be included. The latter group is important because TANF reforms might divert them from ever entering TANF.

Explanatory variables for adults might include a dummy for any disability along with the variables we used in our AFDC probability model: age, race/ethnicity, marital status, education, children in family, other adult in family, and age of youngest child.[318] Explanatory variables for children would not include a disability dummy, but would include characteristics for both the child (age, sex) and parents (presence of each in the family, race/ethnicity, education, and disability), again following the specification we developed for the AFDC probability model.[319]

We did not include variables associated with the respondent's state in this specification, apart from the state effects. Our experience with time-varying state variables in our earlier analysis was not promising, although improvements in the specification might produce more useful findings. The state-level explanatory variables that would be candidates for inclusion are the same as those that would be used in the pooled time series analysis of administrative data (see

[317] We found that only 56 percent of child SSI recipients had a disability by this measure.
[318] See ***Appendix Exhibit E.11.***
[319] See ***Appendix Exhibit E.12.***

previous section). If the variables are developed for that purpose, experimentation with including them in the hazard analysis would require little additional effort.

We understand that staff at ORES have been developing a methodology for predicting SSI eligibility in the general population, stemming from the allowance models developed by Hu et al. (1997) using matched SIPP/SSA data. The prediction methodology might eventually be incorporated in analysis of welfare reforms. At a minimum it would be interesting to observe change in the number of AFDC/TANF recipients who are predicted to be eligible for SSI from the pre-reform SIPPs to post reform SIPPs. Predicted probabilities of SSI eligibility could also be used to replace $Pr(D_{it}^*|X_i)$ in the hazard

Linear Probability Model

The logistic model (Equation 6.1) has some desirable properties, but is computationally burdensome and its coefficients are difficult to interpret (see Chapter 5 for a discussion of the interpretation). An alternative is to replace this equation with a linear probability model.

The most straightforward change would be to replace the left-hand side of 6.1, the log-odds of the hazard rate, with the hazard rate itself, P_{id}. This equation would be interpreted as a linear hazard function, and could be estimated using the same sample as used for the logistic model. This sample includes an observation for each respondent in each period up through and including the period in which the respondent applies/receives an allowance, but not for later periods. Each coefficient can be straightforwardly interpreted as the effect of a unit change in the explanatory variable on the hazard.

Alternatively, one could estimate a linear cumulative probability function. This would be identical to the linear hazard function except that every respondent would have an observation for each sample period, including periods after the period in which the respondent applies/receives an allowance; the dependent variable is coded as unity in each such period. Under this specification, P_{id} is interpreted as the cumulative probability for respondent i at duration d.

Although computationally easy, the linear models described above have some shortcomings. First, the probabilities are not bounded between zero and one. Because SSI applications/allowances are relatively rare events, it might be that a substantial number of observations will have negative predicted probabilities. This may have little practical importance, however, because it is the coefficients, rather than the predicted probabilities, that are of interest. Apotentially much more serious, related, problem is that the effect of a unit change in each explanatory variable on a probability in a linear model does not depend on the levels of other variables. In the logit model, the effect of the same change is proportional to the product P_{id} $(1- P_{id})$, which is greatest when $P_{id} = 0.5$ and approaches zero as P_{id} approaches either zero or one. The fact that probabilities are bounded between zero and one requires that the effect of a change in an explanatory variable diminish to zero as the probability approaches either extreme. The linear model is clearly misspecified in this regard, and might not fit the data as well as a logit model as a result, especially when there are many individuals with true probabilities near one of the extremes. Goodman (1977) demonstrates the linear and logistic

models can produce quite different results when the probability of an event occurring is less than 0.10 or greater than 0.90.

A final issue with linear probability models is that the disturbances are necessarily heteroskedastic. This well-known problem can be easily corrected through the use of weighted least squares.[320]

4. Simulations

Once a model has been estimated, it can be used to simulate counterfactual applications from the first post-reform year (assumed to be 1996) forward. At the beginning of the first year, many of those "at-risk" for first SSI application or allowance will no longer be at risk, having already applied and or received an allowance. For those at risk, counterfactual applications and allowances can be generated with the model over the remaining years of the sample period (through 2001 under our assumption), by dropping the terms with time-varying coefficients (i.e., the time interactions). For each person still at risk, the evaluator would compute the fitted hazard rate (P_{it}) for the first post-reform year and compare it to a random draw from a uniform (0, 1) distribution. If the randomly drawn number is below the fitted hazard, the case would be counted as a counterfactual application or allowance for that year. Such cases would then be dropped from the sample, and the process would be repeated for the next year. The simulation would iterate forward in this fashion until 2001.

The characteristics of individuals who "filed" counterfactual applications and or "received" counterfactual allowances can be compared to those for the actual applications and allowances. Perhaps more interestingly, the evaluator can compare the characteristics of the "marginal" actual applicants (those who would not have applied under the counterfactual) to the characteristics of the counterfactual applicants.[321] Presumably most of these cases will have been at high risk for being in the target groups for both TANF and SSI when observed.

The allowance model will yield analogous predictions of counterfactual first allowances. For these cases, it would be interesting to predict each of the following: SSI payment status for the remainder of the observation period, SSI payments, DI participation, and DI benefits (including dependent benefits) for the year in which the allowance is made as well as for later years. A simple way to do this is to match the counterfactual allowances to contemporaneous actual allowances of SIPP respondents on the basis of both characteristics observed in either SIPP or the administrative data. Matching variables might include year of allowance, year of birth, sex, marital status (when observed in SIPP), monthly DI benefit amount**,** highest level of education, race and ethnicity. Once a counterfactual case is matched to an actual case, the counterfactual case is assigned the SSI and DI eligibility and payment histories of the matched actual case from the date of allowance forward.

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[320] **See Greene (1990), Chapter 20.3.**

[321] If s_a is a statistic (mean or percent) for a characteristic of those who actually filed an application, s_c is the corresponding statistics for counterfactual applicants, and k is the number of counterfactual applicants relative to the number of actual applicants (presumably less than one), then the statistic for the marginal group is: $s_m = (s_a - k\, s_c)/(1-k)$.

Because the sample of allowed cases observed in SIPP in each year is small, the matching variables will need to be prioritized, and the matching may not be very close. An alternative is to use characteristics observed in administrative data only, and match cases to a larger sample of allowed cases. A second alternative is to estimate simple econometric models for the outcome variables using data for actual allowed cases and explanatory variables such as those described above. The models might include:

- A logit model for monthly SSI payment status in each month after the allowance. Every month after the first allowance month for each individual until the last month of the sample period would be an observation. The model should include number of months since allowance along with the other explanatory variables. Some may leave SSI within a few months because they qualify for DI, while others may leave SSI for other reasons, and some may leave and return;[322]

- A multiple regression model for mean monthly SSI payments during eligible months;

- A logit model for concurrent DI allowances;

- For those who receive an DI allowance, a linear probability model for monthly DI eligibility in each month after the SSI allowance, analogous to the SSI payment status model;[323] and

- For those who receive an DI allowance, a multiple regression model for the initial monthly payment amount. Payments amounts for later months can of eligibility can be projected from the initial payment using SSA's cost of living adjustment methodology.

The estimated models could be used to predict monthly SSI payment eligibility, monthly SSI payments, DI allowance, and DI monthly payment amounts for the counterfactual allowances from the date of allowance through the end of the observation period.

More elaborate models for these variables could be developed from administrative data for large numbers of cases, but we think that additional effort in this area would have a relatively small payoff. Continuing eligibility models using administrative data could build on termination models that have been previously developed, but would not have several of the explanatory variables that are available in SIPP.

C. The Combined Impacts of All Reforms on Caseloads and Benefits

1. Objectives

The objective of this analysis is to estimate the impacts of all reforms, combined, on program caseloads and benefits, using the SIPP/SSA matched data. It is likely that this objective will not be fully attained because of the difficulty of controlling for various confounding factors.

[322] An alternative would to estimate a liner or logit hazard model for SSI exit, but this would require estimation of a reentry model, too, because SSI recipients often have interrupted spells.

[323] Because of the five-month DI waiting period, DI eligibility may be delayed for up to five months.

Nonetheless, the analysis will provide useful information about the causes of caseload changes over the post-reform period.

This analysis can readily be applied to both SSI and DI, although it is anticipated that impacts for SSI will be much larger than for DI. Comparison of estimated impacts for SSI and DI may be helpful in interpreting the findings. The presentation here assumes that this analysis would be applied to both programs.

2. Data

There are two candidate data sources for this analysis. One is the SIPP/SSA data for each panel, including the 1996 and later panels. The next panel is scheduled to begin in 2000, so this would limit the analysis to comparison of actual and counterfactual caseloads in the year 2000 and, possibly, later years. The second is CPS/SSA matched data. The CPS is conducted every year, and also has the appeal of larger sample sizes. The SIPP data are nonetheless appealing because of better health, disability, and program participation data.

For purposes of discussion, we assume that the 1996 SIPP panel will be used for the pre-period and the 2000 SIPP panel will be used for the post-period. We discuss changes to the analysis if the CPS/SSA data were to be used – some required by the limitations of the CPS, but others allowed by its strengths – at the end of this section.

We recommend estimating separate models for adults (age 18 to 64) and children. Although we would prefer to split the adult sample by sex and broad age group, the number of SIPP respondents who are SSI recipients may be insufficient to support such an analysis. Among adult respondents in the 1993 SIPP sample, 484 were SSI disability recipients in January of 1993 (***Appendix Exhibits E.1 – E.4***). As discussed further below, we are especially interested in the group of recipients who received their first allowance in the last five years. Only about 290 of the 484 January 1993 SSI recipients in the 1993 SIPP panel are in this category.

3. Methodology

This analysis would use cross-section data from the pre-period to develop prediction models for contemporaneous SSA disability program outcomes – SSI and DI participation and benefits. Once the models are developed, they would be applied to cross-section data from one or more post-periods to predict counterfactual outcomes – the outcomes that we would expect based on the pre-period prediction models and the post-period characteristics of survey respondents. These outcomes can be compared to actual outcomes from the post-period. The characteristics of actual and counterfactual recipients can also be compared, to assess the importance of the various policy changes and other factors in explaining the difference between the actual and counterfactual program outcomes. The models can be re-estimated using the post-period data, and changes in *per capita* outcomes can be decomposed into changes in the relationship between the outcome and individual characteristics and changes in the mean characteristics of the population.

Econometric Model for Adults

The model for adults would predict four different outcomes for each individual in the sample: participation and payments for each of the disability programs during the year. Participation would be defined as eligibility for payment in any month of the year, and payment would based on the amount actually paid for those months in which the individual was eligible. A refinement would be to predict months of eligibility for those who are eligible, which would be needed to compute mean monthly caseloads.

The model might be structured as follows:

- A multinomial model to predict four participation categories: SSI-only, DI-only, concurrent, and none.[324]

- Multiple regression models to predict benefits for those in each participation category. There would be four equations: an SSI equation would be estimated for SSI-only cases, a DI equation for DI-only cases, and an equation for each program for concurrent cases.

Explanatory Variables

Differences between the actual and counterfactual outcomes will reflect the effects of factors that have not been controlled for by the explanatory variables in the model. Selection of these explanatory variables is, therefore, critical to the findings and their interpretation. An important challenge to this approach is that many variables that program participation in a cross-section are also influenced by changes in the economic and policy environment; i.e., they are endogenous.

The following variable types are candidates for inclusion in the participation equations. Those at the beginning of the list are clearly exogenous – not affected by factors that determine program outcomes. Those at the end are, in our judgment, the most likely to be influenced by the reforms.

- Age, sex, race and ethnicity. These basic demographic variables are clearly important determinants of program participation, and clearly exogenous;

- A set of dummy variables for SSI or DI participation more than five years earlier. This is a critical variable because when the next SIPP is started, in 2000, we will be five years into the post-reform period. We would expect the probability of participation given that the respondent had participated more than five years earlier to be smaller in 2000 than in 1996, because of the SSA reforms. The combined reforms may increase or decrease the probability of participation given that the respondent was not a participant more than five years earlier, because the TANF and SSA reforms have opposing effects on allowances. These dummies are "predetermined;" they are exogenous with respect to events of the last five years that may influence participation, but are not exogenous to earlier events.

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[324] Our understanding is that it is now feasible to estimate a variety of multinomial models with four (or even more) outcomes that computationally more challenging than the formerly popular multinomial logit model, but that, unlike the later, do not have the "independence of irrelevant alternatives" problem. These models include multinomial probits. LIMDEP 4.0 offers several alternatives (www.limdep.com).

- Educational attainment. Because schooling levels among SSI recipients are low relative to those in the non-SSI population, educational attainment is likely to be a strong predictor of program outcomes (see Chapter 5). Endogeneity will not be an issue except for children and young adults.

- Disability and health status. These variables will clearly be strong predictors of SSI and DI receipt. Past research has shown, however, that self-reported disability and health measures are influenced by the policy and economic environment.[325] This may be a more serious issue for "any disability" measures than it is for "severe disability" measures.

- Place of residence. This could include state dummy variables (state fixed effects), and/or dummy variables for urban or rural residence. It is possible that some reforms, especially TANF, may influence people to change their place of residence – most likely to move across state boundaries.

- Marital and family status. It seems likely that there will be a relationship between marital and family status variables and SSI participation in a cross-section, holding other factors constant. These variables may, however, be influenced by the reforms. Indeed, among other things, the architects of TANF sought to reduce out-of-wedlock births and encourage the formation of two-parent families.

- Employment, earnings, and other non-program income. Current values of these variables will likely be predictive of current SSI participation, and it would be very desirable to control for changes in these variables because they are influenced by the state of the economy. They are, however, endogenous, both because changes in participation induced by the reforms are likely to be accompanied by income and employment changes in many cases.

SSA might find it useful to estimate a series of models, starting with models that only include variables near the top of the list, and progressively adding others. The more inclusive models would provide more information about the correlates of caseload changes, but the interpretation of the correlates would become more problematic.

Adjusting for economic change may be especially problematic. We do not know how strong the economy will be in 2000. Even if its strength is approximately equal to its strength in 1996, the history of the economy between 1996 and 2000 will be quite different than the history of the economy between 1990 and 1996. We will return to this issue below.

4. Use of the Models to Analyze the Impacts of Reforms

A simple way to use the estimated models for analysis of the impacts of reforms is to predict program outcomes for 2000 using the SIPP panel for that year and the model estimated with the 1996 panel data. Predicted outcomes can be compared to actual outcomes to obtain an estimate of the changes that can be "explained," in a proximate sense, by all factors that have not been captured in the explanatory variables. This will include the policy changes of interest, but may

[325] See Bound (1991), Waideman, et. al. (1995) and Kubik (1997).

include other factors as well – particularly the economy, and perhaps unrelated policy changes. Comparison of the characteristics of simulated counterfactual program participants to actual program participants will provide some evidence of the importance of the policy changes in explaining caseload changes. For instance, a finding that the counterfactual recipients contain a smaller share of young mothers than the actual recipients would suggest that the TANF reforms contribute to the difference between actual and counterfactual recipients. Some of the characteristics of interest will be included in the explanatory variables, but others will not (e.g., TANF participation).

The model could be estimated separately for both years, and the estimates could be used to produce a more formal analysis of the proximate causes of outcome changes from 1996 to 2000 will be helpful. Consider the following linear model for a specific outcome in year t:

Equation 6.4: $Y_i = b_t'X_i + e_i,$

where:

- Y_i is the outcome variable for individual i. The most interesting outcomes will be dummy variables for program participation;
- X_i is a (column) vector of explanatory variables for individual i;
- b_t is a (column) vector of coefficients for X_i in year t. They could be estimates from a linear probability model, or could be derived from a linear expansion of a non-linear model around the mean of the Xs in year t.[326] In a participation model, each element of b_t would estimate the change in the probability of participation associated with a unit change in the corresponding explanatory variable in year t, evaluated at the sample mean of the Xs for year t; and
- e_i is the residual (prediction error).

Given the estimated coefficients, the change in the mean value of the outcome from 1996 to 2000 can be decomposed as:

Equation 6.5: $\overline{Y}_2 - \overline{Y}_1 = b_2'\overline{X}_2 - b_1'\overline{X}_1 = (b_2 - b_1)'\overline{X}_2 + b_1'(\overline{X}_2 - \overline{X}_1),$

where: over-bars indicate variable means, the subscript *2* indicates values for 2000, and the subscript *1* indicate values for 1996.

Equation 6.5 decomposes changes in the mean of the outcome variables to changes in the coefficients, weighted by post year means of the explanatory variables, and changes in the means of the explanatory variables themselves, weighted by the pre year coefficients. If the explanatory variables are exogenous to the policy changes, the effects of the policy changes are captured by the changes in the coefficients. The SSI participation analysis might show, for instance, that:

[326] An intercept is implicitly included as the coefficient of a "constant" in X.

- A decrease in the coefficient of the dummy for participation more than five years before the current period, reflecting the impacts of SSA reforms on existing participants; and

- An increase in the coefficient on a variable indicating that the applicant is a parent, interacted with a dummy variable for no participation more than five years before the current period, reflecting the impact of TANF.

5. Adjustments for Changes in the Economy

One way to at least partially control for the differences in histories of the economies for the five years preceding 1996 and 2000 would be to:

1. Construct state-level variables for the strength of the economy in the latter five-year period relative to the former five-year period;

2. In the model for 2000, fix the state dummy coefficients (fixed effects) at the 1996 estimated values and add the constructed variables to the equation. This would limit the shifts in the state intercepts to be proportional to the measure of the measure of the relative strength of the economy.[327]

6. Use of Matched CPS/SSA Data

Use of the matched CPS/SSA data would have two distinct advantages over the use of the SIPP/SSA data: larger sample size and annual observations (assuming that SSA matches the data every year). The CPS typically has three times as many respondents as the SIPP. The annual data are advantageous for two reasons. First, they allow construction of the estimates for each year. Second, pooled analysis using multiple years of data may significantly improve the evaluator's ability to control for the effects of the economy. The main disadvantage is that the health and disability data are quite limited. This would not be an issue for models that exclude health and disability variables, because of endogeneity. Poor data on participation in programs other than SSI and DI would also be an issue in the comparison of characteristics for those in the actual and counterfactual caseloads.

7. Strengths and Limitations

The clearest advantage to use of the matched Census/SSA data relative to the use of the administrative data is that we can observe characteristics to define target and comparison groups for the non-SSA reforms in a more satisfactory way. We can also control for other characteristics that are predictive of SSI applications, such as observed disabilities as well as past employment histories.

[327] If fixed effects for all states are included in the 1996 model, then an intercept should be added to this version of the 2000 model, to capture outcomes shifts not explained by changes in the economy or other explanatory variables in the model.

Small sample sizes for program entry from the various groups of interest are the most serious limitation. This clearly impinges on our ability to separate the impacts of SSA and non-SSA reforms. Lack of information to identify cases targeted by DA&A and SSI child reforms is also a limitation. Controlling for changes to the economic and state policy environment (outside the non-SSA reforms of interest) may also limit the usefulness of this analysis.

The fact that TANF reforms vary substantially in nature and timing across states will also be problematic for this approach. The number of observations from each state will almost surely be too small to draw any firm conclusions about impacts for that state. Hence, we may well miss large impacts in some states because of small average impacts over all. Inclusion of explanatory variables that characterize TANF reforms could help identify the reforms' impacts, but again we are concerned that idiosyncratic variation in behavior will hide even substantial effects.

D. Validating and Improving the DID Analysis of Administrative Data

Earlier in this chapter we developed a difference-in-differences (DID) methodology for comparing growth in allowances for applicants who reported receipt of AFDC/TANF at the time of application to growth in allowances for other applicants, holding age, sex and possibly other factors constant. We would prefer to classify applicants by whether they had ever received AFDC/TANF.

The matched SIPP/SSA data offer an opportunity to study the relationship between the report of AFDC/TANF receipt at the time of application in the administrative data and self-reported past receipt of AFDC/TANF.[328] The evaluator could use the matched data for SSI applicants to develop a model that predicts past receipt of AFDC/TANF, as reported in SIPP, from information that is observed in the administrative data, including receipt of AFDC/TANF at the time of application. Other variables to include would be age, sex, race/ethnicity, state, and time between SIPP observation and SSI application. Note that the SIPP observation may be before or after SSI application. At a minimum, this analysis would provide SSA with an indication of the extent to which the administrative data on AFDC/TANF receipt at application capture any past AFDC/TANF receipt.[329]

The estimated relationship could also be applied to the administrative data for the purpose of developing alternative target and comparison groups. The idea is to produce series that better approximate allowances to the target group "applicants who are former AFDC/TANF recipients" and to the comparison group "applicants who are not former AFDC/TANF recipients." More specifically, the equation estimated with the matched data could be applied to predict the probability of past AFDC/TANF participation for each observation in the administrative data sample (including the many not observed in SIPP). Summing the predicted probabilities over all allowances made in a given year and state yields an estimate of the number of allowances made

[328] It is our understanding that the administrative report of AFDC/TANF receipt is no currently in the matched file, but it could presumably be added if the analysis described were believed to be sufficiently important.

[329] Earlier in this chapter we mentioned that the *SSI Annual Report* includes an estimate of the number of current SSI recipients who are former AFDC recipients. The number reported might be a significant understatement because it leaves out those who are former AFDC recipients but who were not receiving AFDC at the time of SSI application. The analysis described here would provide a clear indication of the magnitude of the bias.

to former AFDC/TANF recipients in the state in that period. Subtracting from total allowances in the same state-period yields an estimate of the number of allowances made to individuals who are not former AFDC/TANF recipients. The analysis could be done by age, sex and possibly other factors.

A significant limitation of this approach is that the relationship between past AFDC/TANF receipt and AFDC/TANF receipt at time of SSI application is likely to change as a result of the reforms. Eventually this could be checked with matched data from the 2000 SIPP. Another important limitation is potential misreporting of former AFDC/TANF participation in SIPP – in part because of the timing of data collection.

V. EVALUATING THE EFFECTS OF TANF USING EXISTING STATE WELFARE REFORM EVALUATIONS

A. Overview

A number of states implemented time limits and strict work requirements in conjunction with HHS waivers prior to the passage of PRWORA in August 1996. Several of these states have continued experimental evaluations of their programs and offer the best opportunity to assess the impact of these provisions on both adult and child family members. Experimental evaluations offer the unique opportunity to follow the paths of families randomly assigned to treatment and control groups. To the extent that their pattern of SSI applications are significantly different, it is reasonable to conclude that the difference is due to the program intervention.

SSA could work with these states and their evaluation contractors to identify the information that can be obtained under the existing design and to pursue the option of linking evaluation data with SSA administrative data. The latter would allow the contractor to follow SSI applications and allowances among treatment and control group members to supplement existing information as necessary.

B. Specific Opportunities

As outlined in ***Chapter 2*** on Welfare Reform Evaluations, there are nine states that have experimental evaluations in place and offer the opportunity to track research group members' interaction with SSA programs. In ***Exhibit 6.5*** we identify the nine states for further consideration, their evaluation contractors, the program design, and the potential link to SSI. Five of these states: Connecticut, Florida, Indiana, Iowa, and Minnesota have also identified specific child impact measures for incorporation into their studies. Additional information on these state evaluations is available in ***Appendix B***.

All of these states, except Minnesota, are implementing program treatments that include time limits and strict work requirements. Minnesota's approach tests the effect of strong financial incentives and time-triggered mandatory employment and training services. Each of the eight states employing time limits have adopted a different approach to the length of time benefits are offered, reasons for exemptions or extensions, as well as the mix of employment and support services offered to families. This natural variation is both an advantage and a disadvantage. On the positive side, it will allow SSA to explore the effects of a variety of approaches states can

take under TANF. On the other hand, SSA will need to exercise caution if it attempts to pool data across states. While the increased statistical power of a larger sample may be important to explore potentially small effects, the variation in specific state interventions is likely to make such pooling problematic.

Exhibit 6.5
Evaluations of Non-SSA Reforms

Evaluation	Evaluator	Program Design	Administrative Sample Size	Administrative or Survey link to SSI Program Information
Arizona	Abt Associates Inc.	Time limits, family cap, extended transitional Medicaid and child care	5,829 welfare recipients	Analyses of survey data have been conducted on treatment and control group members who transitioned into SSI. SSNs are available for adults in administrative data.
Connecticut	Manpower Demonstration Research Corporation	21-month time limit, all earned income disregarded up to the poverty line, and modified family benefit cap.	6,090 welfare recipients	The survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults and children in administrative data.
Florida	Manpower Demonstration Research Corporation	Strict time limit (24 or 36 months out of any 60 months, depending on recipient characteristics and previous time on assistance) and generous income disregards in a low-benefit-level state.	5,430 welfare applicants and recipients	The survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults and children in administrative data, though children were not used in the evaluation
Indiana	Abt Associates, Inc.	24-month time limit and family benefit cap.	• 10,706 in the recipient sample (includes individuals who were receiving assistance in May 1995) • 6,869 in the applicant sample (includes individuals who filed for assistance after May 1995)	Survey included a question for whether the respondent received income from SSI, but no differential was made whether the SSI is for the child or adult. SSNs are available for adults and children in administrative data. Survey data is linked with administrative data.
Iowa	Mathematica Policy Research, Inc.	Strong work requirements (includes severe sanctions for non-participation) and expanded earnings disregards.	4,224 cases of in the Limited Benefit Plan. The number of cases in the Family Independence Program is not known.	There is a single income category for SSI and DI income for every individual in the household. SSNs are available for adults in administrative data.

Exhibit 6.5 (Continued)
Evaluations of Non-SSA Reforms

Evaluation	Evaluator	Program Design	Administrative Sample Size	Administrative or Survey link to SSI Program Information
Minnesota	Manpower Demonstration Research Corporation	Generous income disregards, eligibility for supplemental benefits up to 140 percent of poverty, and intensive employment and training requirements for longer-term recipients.	14,369 welfare recipients	Survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults and children in administrative data.
Nebraska	Mathematica Policy Research	Intensive case management, time limits, extended transitional benefits	Approximately 7,200 TANF recipients	Linked administrative records on SSI receipt are available for all household members. Survey questions on SSI receipt are also asked. SSNs are available for adults and children in administrative data.
Texas	Texas Department of Human Services	Time limits, personal responsibility agreements	Between 15,000 and 20,000 TANF recipients	Small-scale surveys include questions regarding SSI receipt. SSNs are available for adults and children in administrative data.
Vermont	Manpower Demonstration Research Corporation	Strict work requirements, generous earnings disregards	10,997 welfare applicants	Survey included a question for whether the respondent or any household member received income from SSI, DI or aid for the disabled. An additional question was asked regarding if the income was for the respondent or someone else. SSNs are available for adults and children in administrative data, though SSA data would be needed to determine if the individual is a child or an adult.
Wisconsin	Institute for Research on Poverty	Diversion strategy, strict work requirements	Approximately 4,000 cases	No data is being gathered about SSI participation. SSNs are available for adults in administrative data.
Employment Readiness Demonstration Project	California State University-Bakersfield	Targeted services approaches for persons with multiple barriers to employment in eight counties in California	Approximately 1,500 Hard to Serve TANF cases	State administration data on SSI participation is available. SSNs are available for adults in administrative data.
Welfare to Work Evaluation	Mathematica Policy Research	Welfare to Work Strategies	Approximately 50,000 welfare applicants and recipients	Surveys will include questions regarding SSI income sources. Administrative data will be used, though the sites have not yet been selected.

Exhibit 6.4 also identifies an experimental evaluation in California, the Employment Readiness Demonstration Project (ERDP), which offers the opportunity to explore the effects of mandatory work requirements and program services on individuals with multiple barriers to work. It may be interesting to explore the effects of a demonstration that focuses on individuals who may, as a group, have a greater probability of applying for SSI. All of the individuals in the research group are subject to a five-year time limit on receipt of cash assistance. Only those in the treatment group are receiving intensive services.

Finally, the newly funded Welfare to Work (WtW) Evaluation is still in its formative stages. HHS and its contractor, Mathematica Policy Research, have not yet selected sites to be included in the impact study. WtW will, by definition, focus services on the "harder to serve". For this reason, SSA should consult with ASPE on the evaluation design and explore its relevance to questions of interest to SSA.

One way for SSA to pursue this option further would be to send each of the evaluation contractors a request for information. The request would specify SSA's research questions and state SSA's interest in funding add-on studies to welfare reform evaluations that would address those questions. Each contractor would be asked to describe its interest and capabilities for addressing the questions through an add-on to its existing evaluation(s). The response should include: 1) a technical description of what can be accomplished given access to the evaluation data and, if needed, matched SSA data; 2) a preliminary estimate of the level of effort required; and 3) a discussion of the willingness of the relevant state authority(ies) to permit use of the relevant evaluation data. The latter should clearly specify any technical or contractual conditions that the state authority(ies) would require. With this information in hand, SSA would be in a better position to decide which add-on evaluations to pursue further, and how to pursue them.

VI. STATE CASE STUDIES

A. Overview

SSA can supplement information it gathers through experimental studies by conducting case studies of specific states using both quantitative and qualitative methods. SSA can use state administrative data, SSA administrative data, and survey research data to track the SSI applications of current and former TANF recipients and the SSI allowances of former TANF recipients. This could be expanded to include difference in differences (DID) analyses that would validate the findings from the DID analyses described in our first evaluation option, based on administrative data alone. Qualitative case study data can be used to provide contextual information regarding the TANF program and policy initiatives that influence the movement of clients from TANF to SSI, the experience of SSA field offices and State DDSs, as well as the perceptions of state and local advocates and interest groups. SSA can implement this option by building on existing work in progress and by conducting its own tracking efforts and case studies.

B. Data Sources

There are two primary options for building on existing work. DHHS/ASPE recently funded 14 State/County Welfare Leaver Studies. As summarized in ***Exhibit 6.6***, these studies involve the tracking of multiple cohorts of closed TANF cases over varying periods of time using both administrative data and surveys. SSA could contact ASPE to explore what information these studies will provide as currently funded. SSA could also explore working with ASPE and the states to establish SSA data linkages to the cases being tracked and/or to add questions regarding SSI application or receipt among those surveyed. These projects are still in the formative stage; it may be possible for SSA to work with ASPE and the states to make minor changes in data collection plans that would add to the utility of these projects for SSA's purposes.

Exhibit 6.6
ASPE Welfare Leaver Evaluations

Evaluation	Evaluator	Program Design	Summary
Arizona	None yet	Time limits, family cap, extended transitional Medicaid and child care	The goal of this project is to evaluate (1) whether the sanctions and benefits of the Arizona waiver are successful in motivating participation and employment; (2) whether progressive sanctioning, ending in full-family sanctions motivate employment; and (3) whether families take advantage of the 24-month transitional child care and Medicaid benefits.
Cuyahoga Co., Ohio	Manpower Demonstration Research Corporation and Case Western Reserve University	Comparison of outcomes for Welfare Leavers across two counties in Ohio and California.	Manpower Demonstration Research Corporation (MDRC) will use data from the Urban Change project for a two-site comparison study between Cuyahoga County and the Los Angeles County. The sample includes cohorts from the last calendar quarter of 1996 and first calendar quarter of 1998. The data for the project includes up to ten years of full population administrative data developed for the Urban Change project and mixed-mode sample survey drawn from the second cohort in September 1999.
District of Columbia	The Urban Institute	Little variation from the federal time limits or work requirements.	The Urban Institute will use administrative data from DC's current integrated system to evaluate the impact of welfare reform in DC on individuals whose welfare cases have been closed at least two months. Data are available from 1992 onward. In addition, the study will also include focus groups of individuals who left TANF.
Florida	Florida State will assist with the Survey	Strict time limit (24 or 36 months out of any 60 months, depending on recipient characteristics and previous time on assistance) and generous income disregards in a low-benefit-level state.	This project will address three populations potentially affected by welfare reforms: (1) welfare leavers; (2) those who apply for cash welfare but are never enrolled because of non-financial eligibility requirements or diversion payments; and (3) those who appear eligible but are not enrolled in the state program. Administrative data will be used and telephone surveys of 15,000 households will be conducted over 5 years.
Georgia	Georgia State	4-year time limit, work requirement no later than 24 months after first receiving assistance, family cap, diversion payments of 1-5 months.	The project will build on an on-going study in Georgia by tracking two cohorts of welfare leavers. The first is a cohort of 2,000 leavers will be tracked in administrative records from January to October 1997. A second cohort will track 200 per month from July 1998 to June 2001 via a telephone survey.
Illinois	University of Illinois at Springfield and Chapin Hill	Families with children aged 13 or older have 24-month time limit (otherwise 60-month time limit), family cap, and transition childcare	The University of Illinois at Springfield will build upon an ongoing Closed Case Study using administrative data to track clients for an additional 6 months. A cohort of cases who leave assistance between January and March 1999 will be sampled, using full population administrative data and 800 survey interviews.

Exhibit 6.6 (Continued)
ASPE Welfare Leaver Evaluations

Evaluation	Evaluator	Program Design	Summary
Los Angeles County, California	Manpower Demonstration Research Corporation	Comparison of outcomes for Welfare Leavers across two counties in Ohio and California.	MDRC will supplement their Urban Change project to provide a special focus on leavers. The outcomes will be used for a two-site study that allows comparisons between this project and the Cuyahoga County, OH project while controlling for study design. Samples will be taken from cohorts of cases who leave assistance between January and March 1999. Up to ten years of full population administrative data will be used, and mixed-mode sample survey will be drawn from the cohort of cases who leave assistance.
Massachusetts	Chapin Hall and UMASS-Boston	24-month time limit, community service after 2 -months, family cap.	The evaluator will analyze two cohorts of welfare leavers. The first consists of a full population sample (approximately 20,000 cases) of leavers from January to June, 1997, while the second cohort consists population sample (approximately 15,000 cases) of families that exited welfare between December 1998 and February 1999. For the first cohort, data is collected through the MA Dept. Of Revenue's Longitudinal database and a sample survey. For the second cohort, administrative data and a detailed mixed mode survey of 600 cases will be linked to the longitudinal database.
Missouri	University of Missouri and Midwest Research Institute	48-month time limit, extended child care, diversion payments	The Midwest Research Institute will be linking data from state administrative data on health and human services programs, employment and training programs, wage records, and non-profit emergency assistance records to analyze outcomes for welfare leavers.
New York	Rockefeller Institute of Government is advising the project	Diversion payments, expanded earnings disregards, immediate work requirements.	The focus of this project is on several outcomes for welfare leavers including: the frequency of outcomes such as employment, job retention, use of transitional assistance and returns to assistance; identifying barriers to self-sufficiency; examining the effectiveness of sanction policies in changing behavior; and developing a longitudinal tracking capacity for welfare outcomes in New York City.
San Mateo, Santa Clara and Santa Cruz Counties, California	Sphere Institute and TBD	Comparison of outcomes for welfare leavers across three counties in California.	The SPHERE Institute plans to work with a consortium of three contiguous counties (San Mateo, Santa Cruz, and Santa Clara) to evaluate the impacts of welfare reform on policy relevant subgroups in these counties in 1996 and 1998. Administrative data will be used in an analysis of cohorts in 1996 and 1998. In addition, two thirty- minute mixed mode surveys will be conducted for the 1998 cohort.
South Carolina	Under negotiation	24 month time limits out of 120 months, subsidized employment, no transitional Medicaid longer than 12 months.	The evaluator will analyze individuals who have left welfare and stopped receiving benefits for four months. Two cohorts will of job losers will be used from 1997 and 1999. Outcomes of interest include changes in marital status, employment, and earnings.

Exhibit 6.6 (Continued)
ASPE Welfare Leaver Evaluations

Evaluation	Evaluator	Program Design	Summary
Washington	None yet	Transition child care if income does not exceed 175% of federal poverty level, $1500 diversion payment limit.	The focus of this project is on three populations: those who receive welfare; those who are diverted, and those who appear to be eligible but do not enroll. The sample for the analysis includes three cohorts: a pre-TANF cohort from the fourth quarter of calendar year 1996; an early implementation cohort from the fourth quarter of 1997; and a full implementation cohort from the fourth quarter of 1998. The second cohort includes a sample of continuing cases for comparison, while a mixed mode survey of 1,300 cases is planned for the third cohort. For all cohorts, linked administrative data will be used from TANF Food Stamps, Medicaid, Child support, Child Welfare, Unemployment Insurance and the State Basic Health plan for the 24 months around exit time.
Wisconsin	None yet	Diversion strategy, strict work requirements	This study will expand upon three existing projects. The first project will develop a longitudinal database from 1998 forward to study families who left AFDC prior to the implementation of Wisconsin Works (W-2) or who did not convert during the transition. The second project will include a survey (that is already in the field) for clients who leave W-2 in 1998. The final project will expand a planned study of people who apply for W-2 in Milwaukee between October 1998 and March 1999.

SSA could also explore further the extent to which the Urban Institute's "Assessing the New Federalism Project" addresses issues of interest to SSA.[330] At a minimum, the study will provide detailed information on state policies in all states, case studies of program implementation in thirteen states, and information on the status of low-income families in those 13 states. Six of the Urban Institute states (California, Florida, Massachusetts, New York, Washington, and Wisconsin) are also participating in the ASPE Welfare Leavers Study. The Urban Institute's case study findings from these six states could nicely complement the tracking information obtained through the welfare leavers study. It might be possible to explore the addition of questions of special interest to SSA such as the treatment of persons with disabilities or the active referral of TANF clients to SSA to the current case study protocol. In ***Exhibit 6.7*** we list the states identified as participating in experimental studies of interest, welfare leavers projects, and/or the Urban Institute Study.

Exhibit 6.7
Summary of Evaluations by State

State	Experimental Evaluation	Welfare Leaver Project	New Federalism State[331]
Alabama			X
Arizona	X	X	
California	X[332]	X[333]	X
Colorado			X
Connecticut	X		
District of Columbia		X	
Florida	X	X	X
Georgia		X	
Illinois		X	
Indiana	X	X	
Iowa	X		
Massachusetts		X	X
Michigan			X
Minnesota	X		X
Mississippi			X
Missouri		X	
Nebraska	X		
New Jersey			X
New York		X	X
Ohio		X[334]	
South Carolina		X	
Texas	X		X
Vermont	X		
Washington		X	X
Wisconsin	X	X	X

[330] Urban Institute's "Assessing the New Federalism Project" is available at www.newfederalism.urban.org.
[331] Represents one of the "focus" states in The Urban Institute's ANF project.
[332] Experimental design is included in several county evaluations.
[333] Several California counties have welfare leaver projects.
[334] Cuyahoga County in Ohio has a welfare leaver project.

SSA could also undertake its own tracking studies and case studies. SSA may want to identify a sample of states of special interest, and set up data matching arrangements with those states to track transitions from TANF to SSI over time. Such arrangements could build on and supplement tracking data collected through the ASPE studies by tracking a larger sample of TANF families for a longer period of time than anticipated in those studies. We suggest exploring this possibility initially in Florida and California. Over time, SSA could expand tracking to other large states.

SSA case studies in these same states could provide more SSA-specific information on the aspects of TANF implementation that are of particular interest to SSA as well as the perceptions and experiences of personnel in SSA field offices and state disability determination offices. For example, SSA could explore whether there are specific state efforts to divert TANF applicants or recipients into SSI, and, if so, how they are structured. SSA could also explore state efforts to provide employment and training services for people with disabilities who are not currently receiving SSI. State success in this area could help prevent future SSI applications and may have relevance to SSA's own work initiatives for people with disabilities.

All of these descriptive study approaches will provide SSA information on the flow of TANF recipients into SSI and on implementation choices states are making that may be influencing those transitions. If collected over time in a number of states, this information may be used to support future modeling efforts of the effects of TANF on SSI. At a minimum, it will enable SSA to place the knowledge gained through the experimental studies in a larger context.

It would be especially useful to conduct case studies in states in which evaluations of interest to SSA are being conducted, and in states that account for large shares of the SSI caseload. There are, however, operational criteria that must be considered when states are selected for this purpose. Specifically: key individuals in the state (managers, administrators and technicians) must be willing to invest necessary time and effort; operating systems, operating procedures, and state personnel must be able to provide the necessary information; and the work must have sufficient priority to successfully compete with other state activities for scarce resources.

C. DID Estimates

Linking either the Welfare Leavers data or the state administrative data to SSA data would offer an opportunity to validate DID analyses of SSI outcomes that use the SSA administrative data alone. The state administrative data might be especially useful because they would allow assessment of transitions from AFDC to SSI prior to TANF. As a first step, these data could simply be used to verify the accuracy of the SSA administrative data concerning AFDC/TANF participation at the time of application. Beyond this, however, the data could be used to identify SSI applicants who were not AFDC/TANF recipients at the time of SSI application, but who were former AFDC/TANF recipients. These could then be included in the target group for the analysis of the impact of TANF, rather than in the comparison group. If the number of such recipients is large, then the results might be quite different than those obtained from the administrative data alone.

While these estimates will likely be of better quality than those based on SSA administrative data alone, they will nonetheless be subject to an important *caveat*: the estimates are only as good as

the assumption that other factors affecting SSI outcomes for the target group have proportional impacts on outcomes for the comparison group. Hence, the estimates would not be as strong as those that might be obtained from the experimental evaluations described in the previous section.

VII. OTHER DATA SOURCES

We have collected and assessed information on a variety of data sources that would be potentially useful for the evaluations. The most promising of this is The Urban Institute's Welfare Rules Database, which includes detailed information on state TANF programs. SSA may want to influence information that Urban is collecting concerning TANF recipients with disabilities. Several administrative data sources other than those previously mentioned are also hold promise. They might be linked to SSA data and used for analysis similar to that described in the previous section for the case studies. National surveys other than the SIPP and CPS show little promise of value to the evaluation.

A. Information on State TANF Programs

One source that may be very valuable for making cross-state comparisons of the effects of TANF on SSI is The Urban Institute's Welfare Rules Database. The database includes detailed information on several aspects of individual state TANF programs. Of particular interest are variables being collected on special provisions for persons with disabilities. Presumably, the effects of TANF on SSI would be larger in states that have fewer exemptions from work requirements or time limits for persons with disabilities. In ***Exhibit 6.8***, we highlight some of the questions that are being addressed by The Urban Institute that deal directly with treatment of persons with disabilities. This database also contains several other questions that could be of use in a pooled analysis (e.g., employment-related rules).

Exhibit 6.8
Questions from the Urban Institute's Welfare Rules Database Regarding TANF Provisions for Persons with Disabilities

State TANF Eligibility

- Are SSI recipients eligible for benefits?

Work Requirements

- Are ill or incapacitated persons exempt?
- Are persons caring for an ill or incapacitated member exempt?

Time Limit Requirements

- Are ill or incapacitated persons exempt?
- Are persons caring for an ill or incapacitated member exempt?

SSA may want to investigate whether some of the questions can be expanded to explore specific transitions from AFDC to SSI. For example, the database currently includes questions on whether a state provides assistance in the form of a one-time cash payment, support services, or both to divert applicants or recipients from the state TANF program. This question could be expanded to ask whether a state has specific policies (formal or informal) to divert TANF recipients to SSI, such as requiring persons with disabilities to apply for SSI while they receive

TANF benefits.[335] Additional questions could also be added for the treatment of SSI income for both children and adults in calculating TANF benefits.[336] Such information would provide some indication of each state's effort in trying to divert potential applicants and recipients from AFDC to SSI.

B. Other Administrative Data Sources

We identified several administrative data sources that could be useful for SSA's purposes that were not included in our welfare reform evaluation review (Chapter 2) or site visit discussion (Chapter 3). The first administrative data source is the Integrated Database on Children's Services (IDB) in Illinois. The IDB contains longitudinal records on any child that was in contact with any of the following state services: foster care, child abuse, special education, mental health, juvenile justice, Medicaid, Food Stamps and AFDC. These data also include SSNs that could be used to link the IDB to SSA data. The merged data could be used to analyze transitions from several state programs to SSI in Illinois over several years. According to Goerge, *et. al.* (1996) these data also include information on SSI receipt in years following 1994.[337] They used these data to identify service utilization and the characteristics of children with disabilities in Illinois from 1990 to 1994. Based on their tabulations in 1994 alone, there were 277,689 disabled children in their database.[338] Hence, this database should be sufficiently large to analyze transitions from AFDC to SSI.

A second potential administrative data source is being constructed by The MEDSTAT Group for the Substance Abuse and Mental Health Services Administration (SAMHSA). MEDSTAT is developing national spending estimates for mental health and chemical dependency services, using an integrated database for three state mental health, chemical dependency, and Medicaid programs. These data may be of some use for SSA's purposes, though it could be difficult to use Medicaid data alone to identify transitions from state programs to SSI.[339] We believe the administrative data sources identified earlier in this report would be better suited for SSA interests.

In ***Lewin (1998b),*** we identified two state administrative data sources that could potentially be linked to SSA records. The first is being constructed in Missouri. The state of Missouri has been collecting data for adults receiving AFDC payments along with information on wage records from the state's Unemployment Insurance program since 1992. These data have been made available to researchers at the University of Missouri-Columbia. Dr. Kenneth Troske at

[335] During our site visit in Connecticut, one of the first questions asked was whether a person had a disability. If so, they were directly referred to the SSA office.

[336] Currently the database contains questions for certain types of income (e.g., dividend income, Earned Income Tax Credit).

[337] In their report, Goerge, et.al. did not have access to records on SSI receipt. As a proxy for SSI receipt, they use records for individuals who received Assistance for the Aged, Blind and Disability programs (AABD) from 1990 to 1994. They find that AABD is an excellent proxy for SSI receipt based on administrative records.

[338] They identified children with disabilities based on program participation in special education, AABD, mental health services, or Medicaid (for those who received reimbursed service for preventative, well-child care, and more serious inpatient rehabilitative services).

[339] For example, in some states individuals are not categorically eligible for Medicaid through their TANF participation. Hence, the state may not track other state program participation in its Medicaid population.

the University of Missouri-Columbia is planning to use these data to track transitions from welfare to work. The second administrative data source is being constructed in Maryland. Dr. Catherine Born used an administrative database with wage/employment files and interviews to track a representative sample of over 2,000 families who left the welfare system during the period in which the Maryland Family Investment Program was being implemented (October 19996 to September 1997). In addition to these data, Dr. Born has used state administrative data from previous years to study a cohort of Maryland welfare families to analyze exits from welfare rolls (Caudill and Born, 1997). Dr. Born indicated that the state government of Maryland was very cooperative in assisting her evaluation efforts and noted that they are an excellent candidate to link SSA data to state data. While both of these data sources are potential candidates for data linking, the state administrative data sources identified in the welfare reform evaluation reviews are likely to be more promising because of their experimental and/or state TANF program design.

C. Other Survey Data Sources

In addition to the SIPP and Survey of American Families, there are other potential survey data sources that SSA may want to consider in a future welfare reform evaluation. The first is the Survey of Program Dynamics (SPD) that is being put together by the Census Bureau. The SPD uses an overlapping sample from the 1992 and 1993 SIPP panels and follows them for six years from 1996 to 2001.[340] The SPD could be linked with the 1992 and 1993 SIPP panels to create a ten year panel data set of employment and program participation from 1992 to 2001.[341] These data could be used to analyze transitions from state programs to SSI over the period of the welfare reform changes. Another advantage of using the SPD is that SSA has already linked administrative records to the 1992 and 1993 SIPP panels. Hence, all of the individuals in the SPD will have SSA information from SSA data sources.

One potentially major drawback of the SPD is attrition bias. In Chapter 5, we found that attrition rates were higher for SSI applicants and recipients than others. Because the SPD target sample includes only individuals who responded to the final SIPP interview, there will be some selection bias in the initial sample. Our finding leads us to believe that SSI applicants and recipients will be underrepresented. Further, according to Huggins and King (1998), the sample attrition after the last SIPP interview for the 1998 SPD was very high -- 50 percent. Evaluations that rely on the SPD to evaluate welfare reform will need to account for these attrition biases.

A second potential data source is the Panel Survey of Income Dynamics (PSID). The PSID is a longitudinal file that contains detailed demographic, health, program, and income information for a nationally representative sample. Currently, the PSID contains longitudinal data from 1968 to 1995. While these data could potentially be used in a future evaluation option to analyze long term transitions, we believe the SIPP and CPS provide more viable options because of their sample size (a typical PSID cross-section has approximately less than half the number of observations than a typical SIPP panel) and the availability of matched SSA data.

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[340] Individuals who completed both the first and last wave of the 1992 and 1993 Panels are included in the SPD target sample.

[341] The first sample in the 1992 SIPP panel was interviewed in February of 1992.

A third potential data source is the American Community Survey (ACS).[342] The Bureau of the Census is developing the ACS as a tool for collecting data at the community level that are currently collected only in decennial census years, via the census long form. Thus, the ACS offers the potential opportunity to produce state and local estimates that cannot be supported by the CPS or, for that matter, SIPP.

In comparison to the CPS and SIPP, the ACS data are much less detailed and comprehensive. For instance, the current version of the instrument does not distinguish between TANF, SSI and general assistance income, nor does it identify the individuals in the household who are the recipients. Identification of SSI recipients might be accomplished by linking the ACS data to SSI administrative data. Linked data would allow SSA to track SSI applications, allowances and caseloads by demographic group for states and major metropolitan areas (potentially all areas with populations of at least 65,000 persons or more) annually. Thus, for instance, reasonably accurate annual estimates of the percent of young women with children who apply for, are awarded, or receive SSI in each year could be produced for each state, and compared to the same proportion for young women without children.

The ACS could be useful for monitoring program interactions in the future, but by itself will not be very useful for evaluating the recent reforms because it will not be fully implemented until 2003. Estimates for states and all area with populations of at least 250 thousand are planned for 2001. One could also use the 1990 and 2000 Census long form samples to obtain estimates for those years. The desirability of conducting analyses using data from these combined sources is, however, reduced by comparability problems and lack of intermediate year data. It would be especially problematic to isolate the effects of the reforms from the many other policy and environmental changes that occurred between 1990 and 2000. The logistical challenge of matching the ACS to SSA administrative data might also be a significant deterrent to this activity.

SSA is funding two surveys that will eventually yield substantial information about interactions between SSA programs and other programs. The first of these is a survey of children who were potentially affected by the child SSI reforms, including a sample of those who were not already SSI recipients when the legislation was passed. The second is the Disability Examination Study (DES), which will examine a nationally representative, stratified sample of approximately 5,000 working age individuals with severe disabilities. Most DES respondents will not be SSI or SSDI beneficiaries. A substantial number are likely to be current or recent TANF recipients.

The DES will assess whether each examined respondent meets the medical eligibility criteria for SSI and SSDI, and will produce estimates of the prevalence of disability, defined by these criteria, in the general population. Thus, the DES should provide estimates of both the number of adult TANF recipients and the number of low-income adults with children who are at high risk for SSI. This by itself will not be directly helpful in assessing the impact of the recent reforms because DES data collection is not scheduled for completion until 2001. The DES data will, however, offer an opportunity to develop prediction models for SSI eligibility from SIPP,

[342] Information on the ACS contained in this discussion was obtained from the Bureau of the Census web site, www.census.gov/acs.

CPS and possibly other national surveys. A SIPP based model could eventually be used in analysis of the matched SIPP/SSA data.

One final survey worth brief mention is the National Health Interview Survey, conducted by the Department of Health and Human Services. This periodic survey collects extensive health and disability data on a very large, nationally representative sample, but usually collects little information on income and program participation. Our understanding is that these data cannot be linked to SSA data due to confidentiality issues and lack of necessary identifiers. Hence, these data would not be very useful in an evaluation of the impact of the recent reforms on SSI.Conclusion

It is unrealistic to expect accurate national estimates of the total impacts of all reforms, or of specific non-SSA reforms alone. There is, however, much that can be done to obtain useful information about the interactions between SSA and non-SSA programs, the intersection between the populations they serve, and how they both are changing over time because of program changes as well as other factors. SSA administrative data and matched Census/SSA data offer opportunities to conduct these types of analyses.

We have identified a set of complementary approaches for expanding SSA's understanding of the effects of non-SSA reforms on SSA programs (***Exhibit 6.9***). The best way to rigorously evaluate the impacts of non-SSA reforms on SSI is by building on experimental welfare evaluations currently underway. Even though these evaluations will not produce nationwide estimates of the impacts of reforms, they offer a unique opportunity to establish a causal relationship between specific TANF reforms and SSI outcomes. SSA can supplement information it gathers through experimental studies by conducting case studies of specific states using both quantitative and qualitative methods. SSA can use state administrative data, SSI administrative data, and survey research to track the SSI applications of current and former TANF recipients and the SSI allowances of former TANF recipients. Qualitative case study data can be used to provide contextual information regarding the TANF program and policy initiatives that influence the movement of clients from TANF to SSI.

The analysis of SSA administrative data provides impact estimates for every state. These can be validated in at least some states. The opportunity to validate is strongest in states that are conducting experimental welfare reform evaluations. Pursuit of the latter can be expected to produce quite definitive evidence of the impacts of reforms in these states. In other states validation is limited to using state administrative data or survey data to verify SSA data and to make marginal improvements in the analysis that can be conducted with the SSA data alone. The analysis of matched Census/SSA data complements all of these activities because it offers the opportunity to follow transitions to SSA for samples that are representative of the national population. This analysis can take advantage of the rich individual information that is available in SIPP or the CPS, but linking changes in transitions to SSI to the state reforms will be problematic because of the small samples of transitions observed in each state.

The options for evaluating the combined impacts of SSA and non-SSA reforms are more limited. The analysis of SSA administrative data can produce state and national estimates of the combined effects of the TANF, DA&A, and child SSI reforms on applications, allowances, caseloads and benefits for those who were not SSI recipients or DI beneficiaries at the time the

reform legislation was enacted. While these cannot be validated in ways that are comparable to the validation opportunities available for estimating the impacts of TANF, what is learned from validating the latter would be useful in interpreting the estimates of the combined reforms. The analysis of the matched CPS/SSA data can provide further information on caseload impacts, including impacts on pre-reform recipients. The information gained from these analyses would supplement the findings from the separate evaluations of the DA&A and child SSI reforms. First-cut estimates of the impacts of non-citizen reforms can be obtained through analysis of the administrative SSI.

Exhibit 6.9
Summary of Evaluation Options

Options		**Reforms**			**Outcome Variables**			
		AFDC/ TANF	Non-Citizens	Total	Applications	Allowances	Caseload	Benefits
1. SSA Administrative Data	DID*	Ö	Ö	Ö	Ö	Ö	Ö	Ö
	Pooled Time Series	Ö		Ö	Ö	Ö		
2. Matched Census/SSA Data	Hazard Analysis**	Ö			Ö	Ö	Ö	Ö
	Caseload Analysis	Ö		Ö			Ö	Ö
3. Welfare Impact Evaluation Add-ons***		Ö			Ö	Ö	Ö	Ö
4. State Case Studies***		Ö	Ö		Ö	Ö	Ö	Ö

*Difference in Differences analysis.
**Includes auxiliary analysis of benefit continuation and payments for allowed applicants.
*** In selected states only.

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